36th YEAR

AMERICAN GAS JOURNAL

OCTOBER 1944

Sec. 28

COPYRIGHT DEPOSIT.

THE LIBRARY OF CONGRESS SERIAL RECORD
OCT 20 1944
Copy

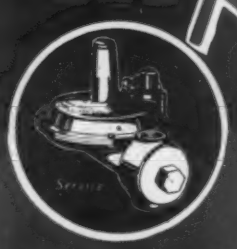
a message to

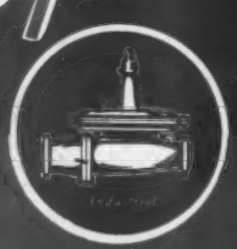
Post War Planners

REYNOLDS Engineers and Executives will gladly work with you to solve any Gas Control Problem. Regardless of whether it is a job for a single regulator, or a more complicated combination of controls, Reynolds will help you achieve the ultimate in accurate gas control. All of the accumulated knowledge and experience of the Reynolds organization are at your disposal.

REYNOLDS is proud of its leadership through more than half a century of service. Wherever accurate gas regulation is needed . . . in the line . . . at the station . . . for industrial plants or in the home, there is a superior proven product by Reynolds.

Reynolds GAS REGULATOR CO
ANDERSON INDIANA U.S.A.





GAS CONTROL SINCE 1892

OCT 19 1944

GAS ENGINEERING

A SCIENCE DEPENDENT UPON PRECISE CONTROL

EMCO SPECIALIZED METERS AND REGULATORS

CONTROL GAS APPLICATION AND USAGE

Meters and regulators are the tools of the gas engineer. With their aid he harnesses this clean, economical fuel and makes it do his bidding. The wonders of the gas world of tomorrow are now being "inked in" on designers' drawings the country over. EMCO engineers and research men have served as consultants on many of these projects.

EMCO specialized equipment for measurement and control has provided the solution to many a knotty problem.

In the expanding march of the Gas Industry, meters and regulators built by EMCO will continue to be of increasing importance. Their part in the future will be magnified by an ever-growing concept of gas engineering accomplishments.

PITTSBURGH EQUITABLE METER CO.

Atlanta Houston **MERCO NORDSTROM VALVE CO.** Los Angeles Boston
Brooklyn Pittsburgh Main Offices, PITTSBURGH, PA. Seattle Buffalo
Chicago Kansas City Tulsa San Francisco New York

National Meter Division, Brooklyn, N. Y.

Engineered Maintenance Instructions

EMCO engineering service does not stop with the sale. We are vitally interested in seeing that the maximum service life is obtained from our products. To aid those using EMCO and Ironclad [illegible] developed the 80 page Maintenance Manual shown here. It's free. Write for your copy today.

EMCO METERS AND REGULATORS

EMCO Standard Domestic Meter | EMCO 11in Meter for Domestic Service | EMCO No. 4 Meter with EMCORECTOR | EMCO Large Capacity Pressed Steel Meter | EMCO Balanced Valve Pilot Loaded Regulator | EMCO Balanced Valve Regulator with EMCOLOADER | EMCO "1001" Regulator Standard Type | EMCO Type "B" Ejector Regulator

For Accurate Gas Measurement and Control

A QUIZ PROGRAM FOR GAS PRODUCTION MEN

What do you know ABOUT CARBURETED WATER GAS MACHINES?

Q. *Can a carbureted water gas machine be operated successfully and efficiently on 100% bituminous coal and 100% heavy oil?*

A. Yes, indeed, if it is a Semet-Solvay REVERSE FLOW Water Gas Machine.

Q. *Does operation on 100% bituminous and 100% heavy oil cause the machine to smoke?*

A. No, indeed, not the Semet-Solvay REVERSE FLOW Water Gas Machine.

Q. *Can a carbureted water gas machine be changed at will, and without alterations in the machine, from coke or anthracite to bituminous coal, and from one grade of oil to another grade?*

A. Yes, indeed, if it is a Semet-Solvay REVERSE FLOW Water Gas Machine. You can take advantage of every change in market prices.

Q. *Is the REVERSE FLOW process new and untried?*

A. No, indeed. The first Semet-Solvay REVERSE FLOW Water Gas Machine was installed in 1937. Today there are ten plants in successful operation and three more under construction. Names gladly furnished on request.

Q. *Can existing water gas machines be modernized to obtain REVERSE FLOW advantages?*

A. Yes, indeed. Semet-Solvay can apply the REVERSE FLOW principle to all three-shell water gas machines.

Q. *Are all Semet-Solvay Water Gas Machines REVERSE FLOW?*

A. No, indeed. Semet-Solvay can furnish all types of water gas machines.

Q. *Are all REVERSE FLOW Water Gas Machines Semet-Solvay Machines?*

A. Yes, indeed. REVERSE FLOW is an exclusive Semet-Solvay development.

Q. *Is it difficult to make sure just what economies and other advantages you can expect from the REVERSE FLOW process in YOUR plant?*

A. No, indeed. Semet-Solvay will be glad to make a survey and complete report without cost or obligation to you. Why not write them today?

SEMET-SOLVAY ENGINEERING CORPORATION

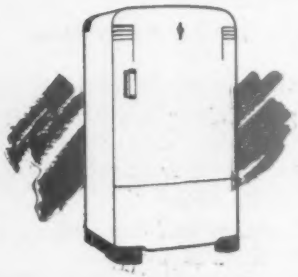
40 Rector Street New York, N. Y.

AMERICAN GAS JOURNAL, October, 1944. Vol. 161, No. 4. Published monthly by American Gas Journal, Inc., at 34 North Crystal St., East Stroudsburg, Pa. Executive and Editorial offices at 53 Park Place, New York 7, N. Y. Entered as second-class matter, October 7, 1928, at the post office at East Stroudsburg, Pa., under the Act of March 3, 1879. Printed in U. S. A.

Preparing for post-war Gas Refrigeration with . . . New Features

In cooperation with the Gas Industry, Servel is preparing now to put into full operation the day war ends a program with two objectives: 1. Through the manufacture and sale of both new and improved Gas Appliances to help Gas Companies maintain and build their loads. 2. Through the distribution and sale of such units to provide new jobs for war workers and service men.

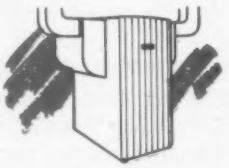
Naturally, a large part of this program will revolve around the manufacture and sale of Gas Refrigeration. The Servel Gas Refrigerator has always been a product that Gas Companies could proudly sell. But Servel engineers are continually working to improve the Gas Refrigerator's performance. New refinements, new features are being developed for storage space . . . convenience . . . performance.



Building for new future business with . . . All-Year Gas Air Conditioning

All-Year Gas Air Conditioning is also a vital part of Servel's post-war program. Here "action now" takes form at Servel's schools.

With these schools now nearing completion, trained and experienced personnel will be available in local Gas Companies to build sound air conditioning organizations, ready to help promote sales effort the day product is available.



Reaching architects and builders with . . . Business Magazine Campaigns

The men who specify and install Gas Appliances and Equipment will be a big factor in post-war sales. Servel is telling these men—architects . . . contractors . . . engineers . . . and realtors—about *All-Year* Gas Air Conditioning and Gas Refrigeration through the best-read publications in the field.

Paving the way to extra load with new Automatic Gas Water Heaters

Certified performance (C-P) Automatic Gas Water Heaters are a post-war certainty. In such a development, new and improved quality will be built in Automatic Gas Water Heaters, providing new standards of performance, service and operating costs.

The same high standards of engineering and production used in developing the Gas Refrigerator are now being applied to the creation of a line of unique Servel Automatic Gas Water Heaters for post-war distribution.

Soon, complete plans for advertising and promotion will be available to the industry.

SERVEL

Helping you plan post-war sales promotions with... Sales Case Studies

Sales planning and promotion —both now and post-war— will be tremendously important in the peacetime sale of Gas Appliances. To help you make your plans, and to bring you the experience of other Gas Companies, actual case studies of successful sales programs are appearing every month in the Servel News.

These case studies are supplied in digest form and cover such important subjects as Dealer Cooperation, Kitchen Planning, Apartment House Sales, and Architect and Builder Promotion.

Promoting good will for Gas among homemakers with... Saturday Radio Show

The Billie Burke program over stations of the Columbia Network every Saturday morning has won thousands of loyal listeners. Housewives from coast to coast are grateful for the help this program has given them.

Besides providing nutrition information and entertainment, Servel, through interesting dramatized announcements, is planting the idea with this vast audience that the silent Gas Refrigerator is the one to buy when production is resumed.

Listeners are also being told the story of *All-Year* Gas Air Conditioning and of how it will bring them new comforts for healthier, more pleasant living. In short, Servel's radio program is one of the most important promotion features of Post-War Action Now.

Developing the market now for Gas Refrigeration with... National Advertising

To tell millions of families about Gas Refrigeration, Servel advertising is appearing in leading national magazines. *All-Year* Gas Air Conditioning also is a part of this national campaign.

It's this type of post-war action *now* that will help customers remember you when they can again buy appliances.

... with Local Ads

To help you get the full benefit from this national magazine advertising, Servel has prepared local campaigns on Gas Refrigeration and on *All-Year* Gas Air Conditioning.

SERVEL

A program to help you select post-war sales personnel

When final victory comes, there will be a wild scramble for markets in the home appliance field. Gas Companies—if they are to retain their present load and build greater future loads—must be able to sell new and improved Gas Appliances in quantity.

Hundreds of new home appliances will appear after the war. The majority of these will be competitive products . . . products that are already being actively promoted. So in spite of the sudden release of a tremendous post-war purchasing power—gas products will still have to be *sold*.

To meet this problem, many additional salesmen will have to be recruited and hired, as most Gas Companies will have to build virtually a complete new sales department. These new salesmen must be the very best available. There will be no time to make mistakes in selecting them.

Servel, anticipating the need of Gas Companies for an effective method of selecting men, has developed a comprehensive program for the selection and training of domestic appliance salesmen.

Some time ago, Servel engaged a nationaliy known authority on personnel administration. He and his associates made a national survey covering some 50 operating companies in all parts of the United States. From this wealth of material a program for selecting salesmen was developed.

This program will by no means solve *all* the sales manager's problems. But, by pointing out the men who are most likely to prove unsatisfactory, it will help him improve his "batting average" in the selection of good salesmen.

To properly explain this selection program, Servel will conduct a series of Regional Sales Clinics. Details about these clinics, and the date that one will be held in your section, will be sent to your company in the very near future. Servel, Inc., Evansville 20, Ind.

SERVEL

TARGET FOR TOMORROW . . .

In the Planned Gas Kitchen of integrated design, our industry has a powerful vehicle which—if promoted aggressively and effectively—can match the best of the post-war competition in the battle of the fuels.

This All-Gas Kitchen with its integrated design provides a sales opportunity to maintain and protect existing gas load through a program of modernization in existing homes. It can be the means of adding considerable new load when effectively merchandised to builders and owners of new homes.

From the research laboratories of our industry will come some amazing new developments for the gas-served kitchen of tomorrow. Probably a complete unit adaptable to any kitchen—old or new—will be available soon after the war through the cooperative efforts of Gas Appliance manufacturers.

Servel's contribution to this important program will be announced soon and will include a comprehensive training and merchandising plan of action.

It will be designed to enable Gas Companies to take full advantage of the post-war trend toward *A New Quality of Living!*

SERVEL

PUBLIC SERVICE INSTALLS U. G. I. MECHANICAL GENERATOR SET

Operating Floor of Harrison Generator House

RECORD OF U. G. I. CARBURETTED WATER GAS APPARATUS AT HARRISON, N. J. PLANT

1926—Original installation of eight 11′0″ U. G. I. hand clinkered Carburetted Water Gas Sets using gas oil and coke.

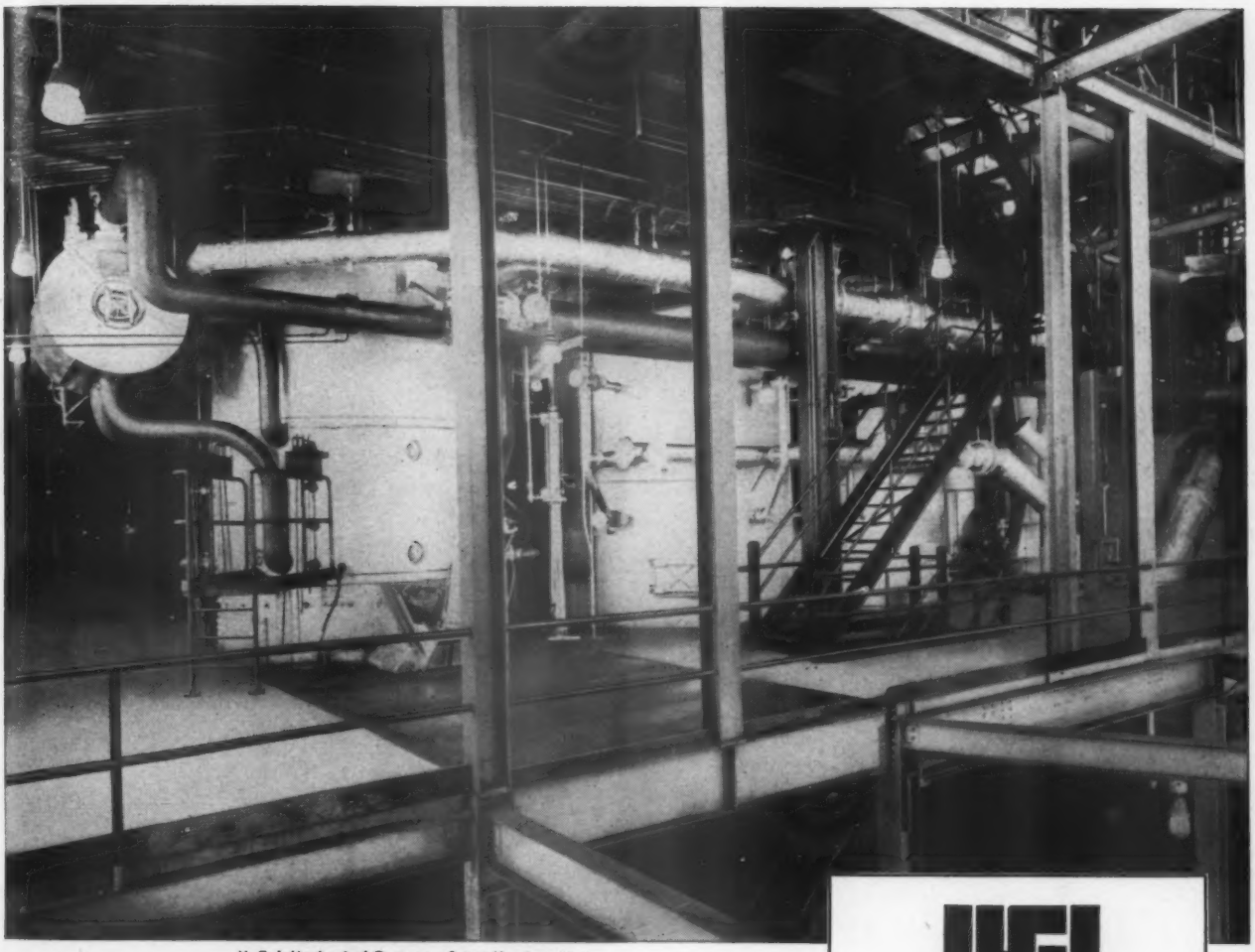
1929—Original installation modified for use of heavy oil with substantial increase in capacity.

1944—New installation of a 10′ x 9′ U. G. I. high capacity Mechanical Generator Carburetted Water Gas Set equipped with O'Keeffe Carburetter Linings (Public Service Development) and for use of the U. G. I. Heavy Oil Process. Capacities well in excess of guarantees are being secured.

UNITED ENGINEERS & CONSTRUCTORS INC

NEW YORK PHILADELPHIA CHICAGO

USE "UNITED ENGINEERS" FOR PLANT EXPANSION



U. G. I. Mechanical Generator Set at Harrison, N. J.

UNITED ENGINEERS builds "UGI" apparatus which gives high efficiency, high capacity, and ease and flexibility of operation to economically meet the plant needs with the fuels available for use.

UNITED ENGINEERS provides an organization experienced in all of the problems of present day construction to design, construct and place into operation the facilities necessary for gas plant expansion.

UGI Equipment

UNITED SERVICES PROVIDE

EXPERIENCE IN DESIGN
United has over 50 years experience in gas plant design.

EFFICIENT APPARATUS
United has pioneered major developments in water and coal gas production.

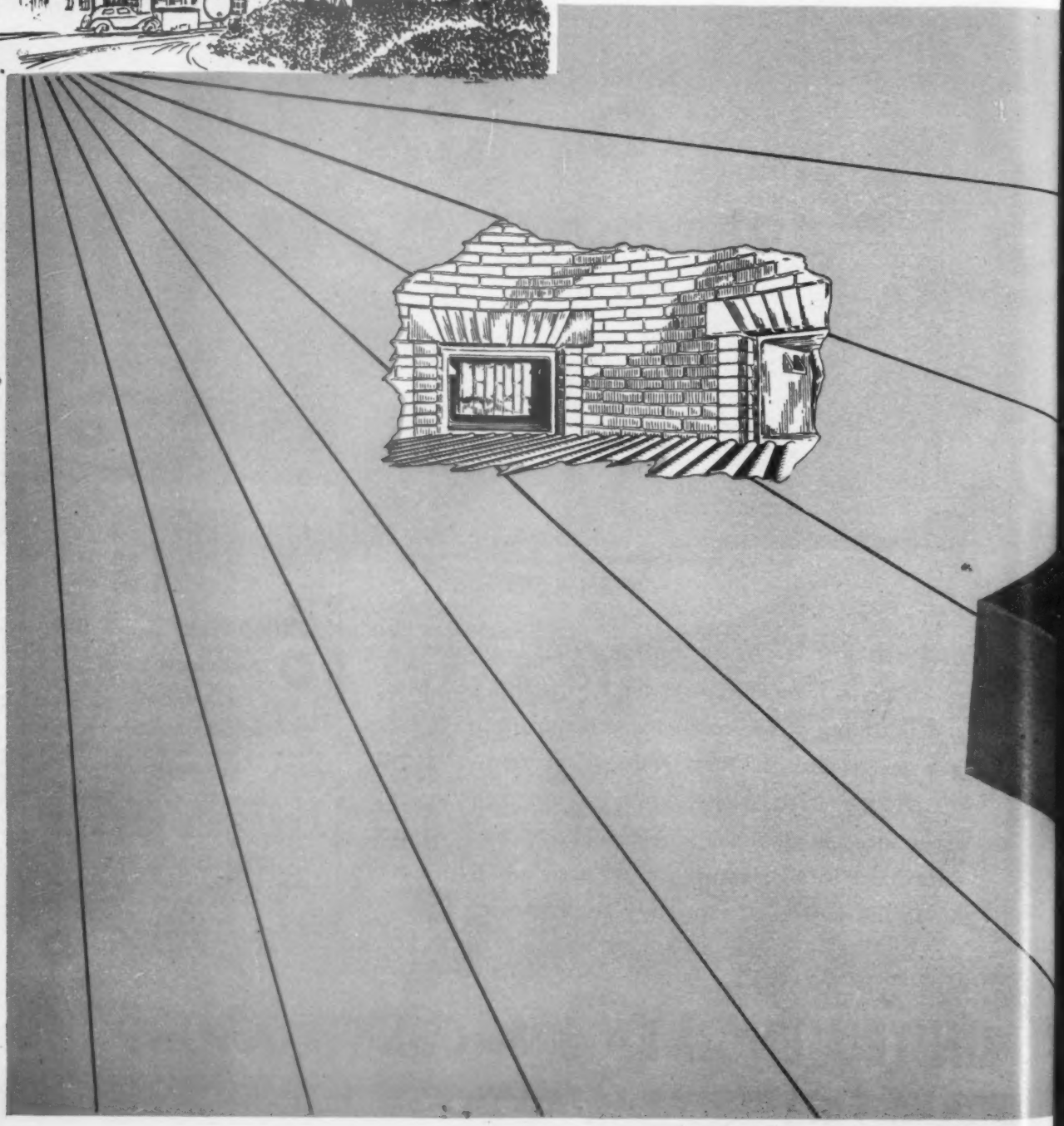
ECONOMICAL CONSTRUCTION
United has large well organized forces for gas plant and general construction work.

EXPERIENCE IN OPERATION
United has experienced plant operators for securing most efficient results.

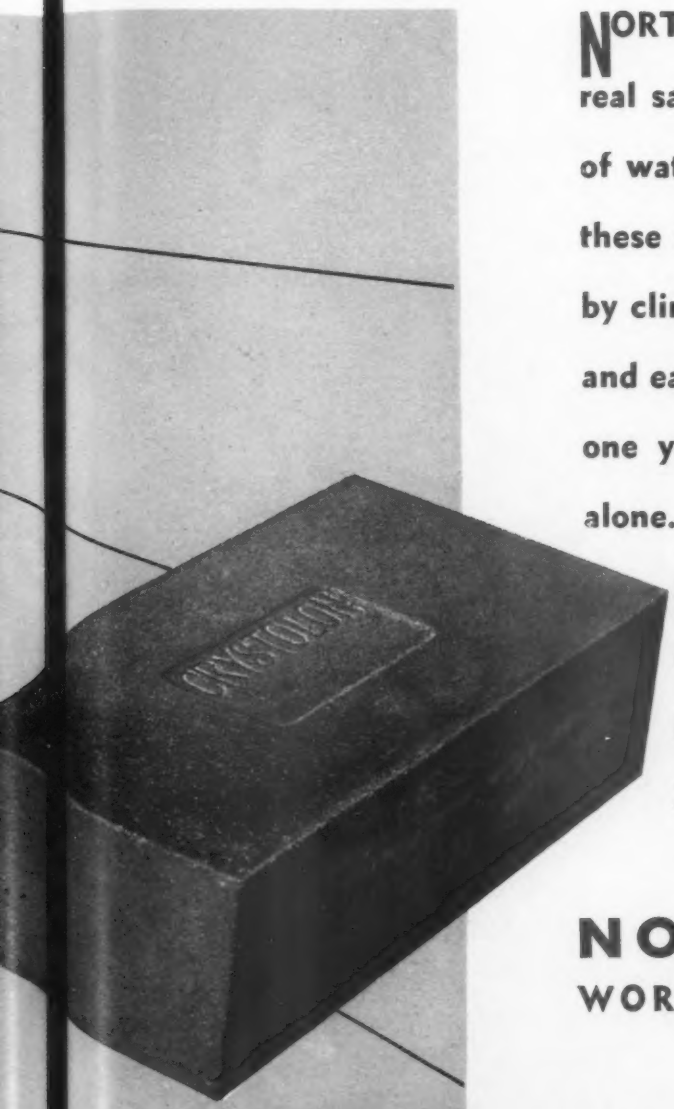
UNITED ENGINEERS & CONSTRUCTORS INC

NEW YORK PHILADELPHIA CHICAGO

Save time and money . .



. . . with CRYSTOLON brick



NORTON CRYSTOLON BRICK are bringing real savings in time and money to operators of water gas sets. The dense hard surface of these silicon carbide brick resist penetration by clinkers which can be removed so quickly and easily that the lining will pay for itself in one year through savings in cleaning costs alone. CRYSTOLON Brick, because of high refractoriness and great ruggedness, eliminate costly "Downtime" for repairs by performing efficiently for 19,000 to 27,000 hours of actual gas-making time.

NORTON COMPANY
WORCESTER 6, MASSACHUSETTS

Norton Longer Lasting Refractories

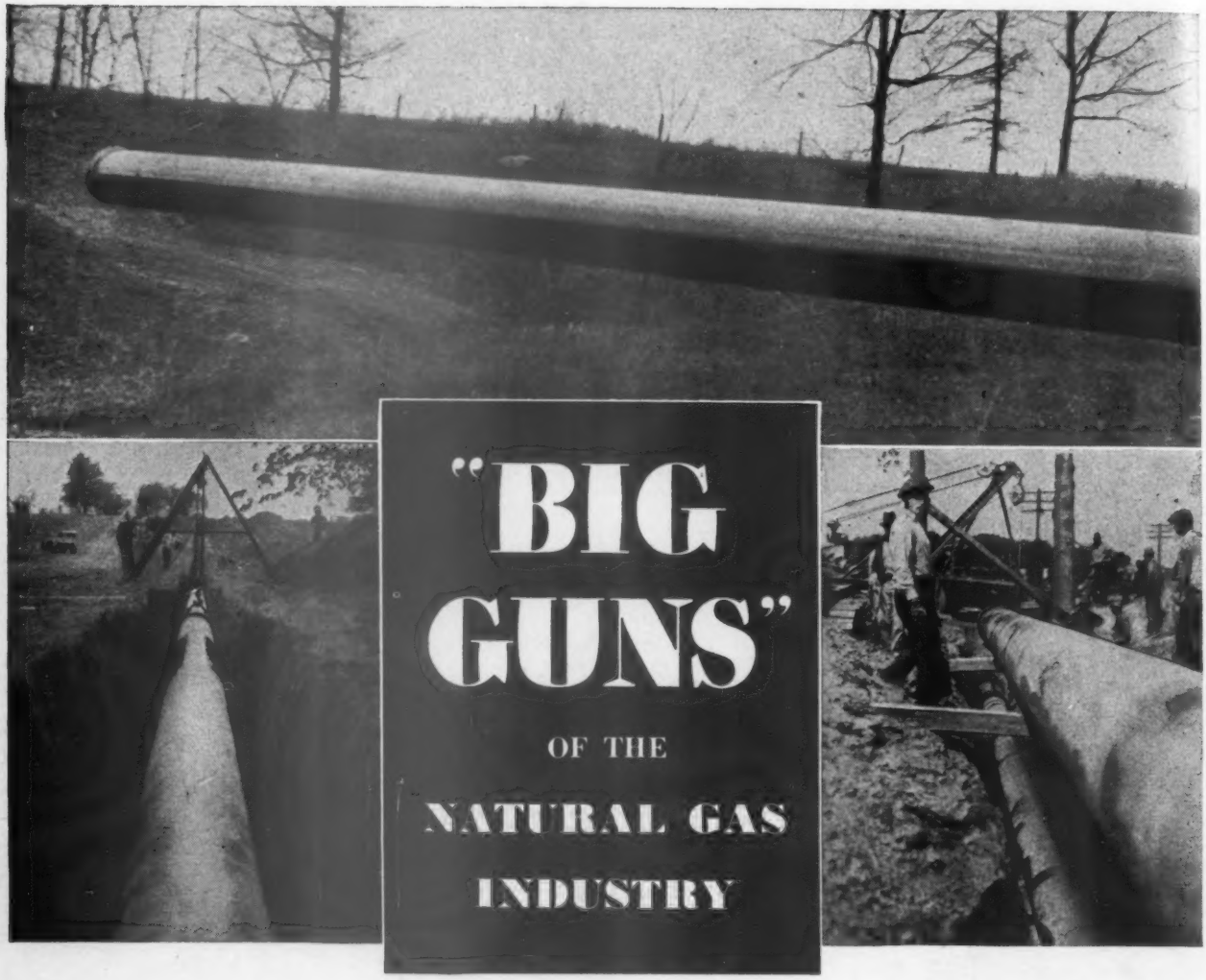
BLAW-KNOX GAS CLEANERS Protect

PROTECT fine compressor stations. This battery of four Blaw-Knox Gas Cleaners is one of the first installations made on a line which now has thirty-three Blaw-Knox Gas Cleaners. They are protecting the most heavily loaded long transmission lines in the United States.

BLAW-KNOX GAS CLEANERS remove pipe line dust easily and efficiently. Their effective operation is thoroughly described and illustrated in Blaw-Knox Catalog No. 1869, a copy of which will be sent to you upon request.

BLAW-KNOX DIVISION
of Blaw-Knox Company
2070 FARMERS BANK BUILDING • PITTSBURGH, PA.
NEW YORK · CHICAGO · BIRMINGHAM · PHILADELPHIA · WASHINGTON

FOR MAXIMUM YIELDS OF
HIGH BTU GAS AND MERCHANTABLE COKE
PITTSBURGH COAL CO
CHAMPION COAL
— PITTSBURGH, PA —
Champion Coal
CONTINUOUSLY SERVING THE INDUSTRY
FOR HALF-A-CENTURY
PITTSBURGH COAL COMPANY
General Offices: OLIVER BUILDING · PITTSBURGH, PA.
Cleveland, O., Sault Ste. Marie, Mich., Buffalo, N. Y., Utica, N. Y., New York City, Philadelphia, Pa., Youngstown, O.
PITTSBURGH COAL CO., LTD., London, Ont., Hamilton, Ont., Toronto, Ont., Windsor, Ont.
PITTSBURGH COAL CO. of Wisconsin, Duluth, Superior, Minneapolis, St. Paul · MILWAUKEE-WESTERN FUEL CO., Milwaukee, Wisconsin



IN the year 1943 Columbia System threw all its energies into the war effort. Output of natural gas and electric energy reached all-time high marks in the System's effort to support to the utmost our country's war production program. The results of this effort illuminate the System's vital role in public service in war as well as in peace.

The gas industry today is performing a two-fold service to the nation. While continuing essential fuel supplies to our people, it produces and distributes gas for myriad wartime uses, including the production of sinews of war . . . ranging from explosives, perfected by recent chemical advances, to healing agents in the name of mercy.

Yes, Columbia System is enlisted for the duration. Already 2750 of its employees have relinquished varied peacetime duties to join the colors.

COLUMBIA GAS & ELECTRIC CORPORATION

COLUMBIA SYSTEM

"Never mind little bride, some day you'll have a range that really cooks

...and it's going to be a brand new *Magic Chef*"

THE DAY IS COMING—and let's hope it will be soon—when you and your husband can settle down in a "Happiness House" of your very own!

Then you can stop worrying over the uncertain performance of that old-fashioned stove. Because, of course, he's going to insist on getting you a range that *really* cooks—a sparklingly new Magic Chef. It will be *beautiful* as well as convenient and practical. And so easy to use, with gas, the *ideal* fuel!

Until our war job is done, we can't build your new Magic Chef for you. But it will be ready just as soon as possible after victory. And it will be worth waiting for!

★ ★ ★

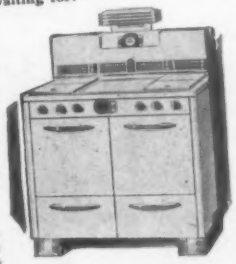
Do you live beyond the gas mains? If so, we assure you that fine, new Magic Chef ranges will be available after the war for "Pyrofax" Gas in eastern and central states and for other L. P. (bottled and tank) gases elsewhere. ★ ★ ★

One of American Stove Company's plants is building a gas range in the model permitted by W. P. B. If your immediate need for a range is urgent, ask your dealer or gas company how you can get one.

★ ★ ★

This "CP" seal on your post-war Magic Chef will assure you of "Certified Performance" in your cooking. Look for it.

AMERICAN STOVE COMPANY
Cleveland, Ohio



You can plan on owning a Magic Chef like this after the war

Magic Chef

THE RED WHEEL GAS RANGE WITH THE LIFETIME BURNER GUARANTEE

Copr. 1944 American Stove Co.

THE SATURDAY EVENING POST · GOOD HOUSEKEEPING
WOMAN'S HOME COMPANION · ARCHITECTURAL FORUM
PARENT'S MAGAZINE · BETTER HOMES & GARDENS

45,265,474 READERS

Magic Chef NATIONAL ADVERTISING is doing these things

1 Maintaining outstanding public preference for Magic Chef Gas Ranges.

2 Presenting the Magic Chef story to your best postwar prospects against a background of timely, human interest situations in present day American homes.

3 Informing your prospects that Magic Chef gas ranges will be available for regular city gas service and L.P. bottled or tank gases.

4 Creating the desire in your prospects to have a Magic Chef Gas Range.

The advertisement shown at the left appears in the October 14th issue of THE SATURDAY EVENING POST and in other leading national magazines.

For franchise information on Magic Chef Gas Ranges, write your nearest American Stove Company office.

AMERICAN STOVE COMPANY
4901 Perkins Avenue · Cleveland, Ohio
NEW YORK · PHILADELPHIA · CLEVELAND · CHICAGO
ST. LOUIS · ATLANTA · LOS ANGELES

Magic Chef

RED WHEEL GAS RANGES
AND HEAVY DUTY GAS COOKING EQUIPMENT

The Symbol of "Certified Performance" CP

Awarded to Quick Meal Stove Co. Division of American Stove Co.

The One Joint That's All Ready

Dresser Bellmaster... Style 85

THE "ONE-PIECE" MECHANICAL JOINT

There are no "bits and pieces" to handle, stock or count with Dresser Bellmasters. This new mechanical joint for cast iron pipe reaches you completely factory-assembled—nothing to put together. It's ready "to go." That is why the industry calls it a "one-piece" joint, for, as far as your workmen are concerned, it is all one-piece.

Bellmasters can be stored in the wooden cases in which they are shipped, trucked to the job in these same containers and excess joints returned to the stockroom in the same boxes.

But ease in handling and storing is only one of the many advantages of Bellmasters. They are, without question, the simplest, easiest and fastest to install. Take a Bellmaster from its original shipping case—insert it in the bell, "stab in" the spigot end and tighten the capscrews. That is all there is to it. The only tool needed is a wrench. Your newest workman will average less than 5 minutes to a joint. And he will make a bottle tight, corrosion-protected, flexible joint that will last as long as the pipe.

Plan now to standardize on Bellmasters for cast-iron pipe. You will find they save you time, money, trouble Specify Bellmaster end pipe as present inventories run out. Your regular source can usually supply you promptly.

Assembly with pneumatic air hammer. This Dresser workman is putting what is needed into the Bellmaster, the only self-contained, one-piece, pipe joint.

Bellmasters leave the factory well-protected and arrive at the storehouse in a compact, easy-to-store box.

The one-piece feature can best be appreciated by the man in the field. He has only one piece to handle and he can really make time.

In Canada: Dresser Manufacturing Co., Ltd., 60 Front St., West, Toronto, Ont.
Houston Office and Warehouse: 1121 Rothwell St., Houston, Texas

DRESSER MANUFACTURING COMPANY • BRADFORD, PA.

ONE OF THE DRESSER INDUSTRIES

VOLUME 161
NUMBER 4

AMERICAN GAS JOURNAL

ESTABLISHED 1859

WHOLE
NUMBER 3848

OCTOBER 1944

PUBLISHED MONTHLY BY
AMERICAN GAS JOURNAL, Inc.
53 Park Place, New York 7

S. G. KRAKE, *President and Treasurer*

M. E. KELLEHER, *Secretary*

A. I. PHILLIPS, *Consulting Editor*

H. T. MATTHEW, *Business Manager*

JAMES C. MUNN, *Midwest Representative*
10515 Wilbur Ave., Cleveland 6, Ohio
Tel. Sweetbrier 0052

Copyright, 1944, American Gas Journal, Inc.

Subscription $2.00 per year U.S.A.; $3.00 Canada; $4.00 Foreign. Single copies, 25 cts.

CONTENTS

Comment on Practical Programs 19

Institute of Gas Technology—A Dream Realized—Garnault Agassiz 21

Gas Industry Problems—George H. Smith 31

How to Avoid Motor Vehicle Damage Suits—Leo T. Parker .. 37

To Sell More Gas—J. E. Bullard 40

Tests to Determine Candidates' Selling Ability on Gas House Heating 42

1944 Post-War Committee Reports on Committee Developments —A. M. Beebee 45

Present Status of Coordinated Kitchen Program—E. V. Sorenson and H. Vinton Potter 47

Electric Competitive Situation—R. E. Ginna 47

Engineering and Economic Phases of Our Industry—Hall M. Henry 50

51st Annual Meeting of Pacific Coast Gas Association—Fred A. Herr 55

News of the Gas Industry 60

The most dog-eared

HANDBOOK ON GAS MEASUREMENT

AND EXPERT METER MAINTENANCE

More than 200 pages of quick reference charts and data—six pages of cross-indexing.

TABLE OF CONTENTS

Measurement of Gases
Physical Properties of Gases
The Tinned Steelcase Meter
The Ironcase Meter
The Measurement of Gases at High Pressure and Vacuum
The Meter Prover
Testing Meters
Low Pressure and Critical Flow Provers for Field Testing
Meter Maintenance and Performance Records
Repair of Tinned Steelcase Meters
Repair of Ironcase Meters

Since the first of many printings in 1928, AMERICAN Meter Handbook E4 has continued to be the *most used* guide on measurement and meter repair procedure, because it is complete and practical.

For war and peacetime operating economies and meter shop efficiency, this book is giving widespread and profitable service.

Over 7000 are in use. It is the standard data book by and for meter men . . . wide enough in scope to be used extensively as a textbook by engineering schools, and for reference in technical libraries.

Many gas men today have new responsibilities. Write us if the content of this book can be of service to you.

AMERICAN METER COMPANY

2198

GENERAL OFFICES • 60 EAST 42ND STREET, NEW YORK 17, N. Y.

OCTOBER
1944

AMERICAN
GAS JOURNAL

VOLUME 161
NO. 4

Comment on Practical Programs

A GREAT VARIETY of work is now in progress by the gas industry, and for the industry, which evidences a postwar period of great activity. They include a wide range of fundamental and applied research, methods of selecting the most competent sales forces and educational programs to educate the public on the benefits of efficiency and properly installed heating and air conditioning equipment. To mention some of them:

Servel, Inc., have launched a postwar sales planning service which is designed to aid gas utility companies in preparing definite sales plans *now* for the postwar years. This plan will be of special value to the more than 500 gas companies who distributed gas refrigerators before the war and to those companies who have not previously sold gas appliances, but will do so after the war. It is estimated that there will be an increase of at least 8% in the number of utilities that will merchandise applications after the war.

Servel is also conducting a series of regional clinics on the selection and hiring of gas appliance salesmen. Dr. Robert N. McMurry, an authority on personnel administration and market research, has been engaged by Servel to develop a practical technique for the selection of salesmen. This service will be available to the gas industry.

The Bryant Heater Company, Cleveland, Ohio, has underwritten a research program by the Personnel Research Institute of Western Reserve University of Cleveland, which consists of a series of psychological experiments designed to provide an accurate basis for the selection of postwar salesmen to sell gas heating equipment for the home. In charge of the project is Dr. Jay L. Otis, Director of the Institute. The project is further described in this issue of the Journal. These services to the gas industry by Servel and Bryant are bound to be of great benefit to the utilities in further building their domestic gas load.

In the matter of research, the industry is familiar with the splendid work being performed by the American Gas Association Laboratories. Their research work on gas burner design alone is of the utmost importance to both manufacturers of appliances and the utilities. A booklet has just been issued by the Association enumerating all research projects being carried on.

As the reader of this issue of American Gas Journal will realize, the Institute of Gas Technology, in spite of the handicaps of war, has made definite progress in its activities to form an independent organization to work for the upbuilding of the gas industry, especially in providing it with thoroughly trained young scientists to aid in the development of its technology, and bring light upon some of its most perplexing problems. With peace back again, it is reasonable to assume that this new agency —created by gas executives—with its four-point program of education, basis research, sponsored investigation, and dissemination of scientific information, functioning normally, will prove of inestimable value to our industry.

In November 1943 the Indoor Climate Institute was formed at a meeting in Chicago, Illinois. Its plans call for a national program of education in behalf of the heating, cooling and air conditioning industries. Paul B. Zimmerman, President, stated "Today, heat, next to food, is the most important factor affecting the health of Americans. The activities of the Indoor Climate Institute will include a far-reaching program of training and public education on improved living standards. The home owner will, for the first time, be able to understand and evaluate the many advantages obtainable through modern heating, cooling and air conditioning equipment properly installed. This will assure greater indoor comfort and health."

All of the material developed by the Indoor Climate Institute will be available to the gas industry. The headquarters of the I.C.I. are located in Detroit, Michigan.

Entrance to the Institute of Gas Technology, destined to play a significant role in the future development and prosperity of the industry which it was founded to serve.

Institute of Gas Technology —A Dream Realized

By

Garnault Agassiz

THREE YEARS AGO this summer there came into existence an organization that is destined to play a significant and vital role in the future of the Gas Industry, contributing not only to its technological advancement but to its growth as well, particularly in furnishing it with the means to meet the acute competition that is bound to come with the cessation of the war, and in broadening immeasurably its horizon. This organization is the Institute of Gas Technology.

In the three years which have elapsed since its foundation, the Institute of Gas Technology has had its periods of delay and its disappointments, but it has never lost sight of its ultimate objectives, and in spite of the trials and exigencies of war has gone ever forward, until today it can claim with justice to have carved out for itself a permanent position of usefulness within the industry it serves.

Institute Born of a Vital Need

Although born of a vital need, the Institute of Gas Technology was not the result of a single idea, but rather the crystallization of the ideas of a number of forward looking and imaginative gas executives who, broadly schooled in the methods of modern business realized that if gas were to hold its own and go forward to greater achievements it would have to make distinct technological advances, and, perhaps, have a transfusion of blood, such as would come from the placing on its payrolls of young and virile men, scientifically trained, broad visioned, and enthusiastic, and able not only to interpret the Industry's growing changes, but to take advantage of, even to initiate new developments.

These practical gas men realized that the future existence of the gas industry would depend largely on the development of its technology, and the leaders to apply it. They knew, too, that such leaders would have to be educated in the broadest interpretation of the term, so that, owing allegiance to no other fuel, they would bring to the Industry renewed faith and an entirely new point of view. This is a "consummation devoutly to be wished."

Its Founders Far-Sighted Men

Far-sighted were these executives, and they knew that research, both fundamental and applied, would be the answer to many of the future problems of the technology of gas; that great as had been the technical advances of the past, those of the future must be even more pronounced if the fuel were to retain its acknowledged position as the earth's most efficient and economical source of heat. They knew, also, that the value of research was no longer hypothetical; that it had proved itself over and over again, and had become absolutely indispensable to the economic scheme.

How to develop these young scientists was a problem, but the progenitors of what is now the Institute of Gas Technology felt that the existing practise of training technical men the hard way—that is to say from the ground up—while successful as far as it went, did not meet all of the requirements of the growing gas industry. This sort of training was necessarily the function of the college, just as basic research was the function of the institutional laboratory rather than that of the utility or appliance and equipment manufacturer. What the latter can do lies in the field of applied research.

The ideas which have crystallized into the Institute of Gas Technology were by no means new, but they did not show signs of materializing until the Spring of 1939 when they were brought to the fore with the reading of a comprehensive paper on the subject, at a meeting of the American Gas Association, in San Francisco, by Frank C. Smith, President of the Houston Natural Gas Company, Houston, Texas. The immediate result of this paper was the setting up of a committee to study the requirements of the situation. The committee reported favorably, and it was decided to proceed immediately with the formation of an organization able to carry out the purposes outlined, not as a part of the American Gas Association but as a separate self-governing body of non-conflicting purposes and interests. It can be stated in this connection that the policy of the trustees from the outset has been to emphasize the fact that the aims of the Institute are entirely distinct from those of the American Gas Association laboratories, and that this was the underlying reason for establishing it as a separate organization.

My belief in the aims and purposes of the Institute of Gas Technology is founded upon intimate knowledge and contact since its inception. The Institute's objectives are known; its course is charted, and although it is still young it has made long strides on its chosen path. Its possibilities are unlimited, and its ambitions and hopes will appear clearer with the passage of time.

With the return of peace, the Institute will again be able to take up all of its fundamental activities, from which, in some measure, it has been diverted by its contributions to the war effort. It will place especial emphasis on the objectives that constitute the landmarks of its existence: education, basic research, and the collection and dissemination of scientific information. With its ability and power to stimulate interest in research, I firmly believe that the Institute of Gas Technology will take its proper place as a major factor in contributing to the advancement of the Gas Industry in its every branch.

Frank H. Lerch, Jr.,
Chairman of the Board of Trustees, Institute of Gas Technology.

John I. Yellott, Director, is a graduate of Johns Hopkins, and an engineer of achievement.

Incorporated in May, 1941, as an Affiliate of Illinois Institute of Technology

Following this decision, the committee was reorganized under the chairmanship of Mr. Smith, and the funds for its creation were provided. It was recognized that its success would be largely dependent on affiliation with some influential educational institution, and, after a special committee had investigated the opportunities of more than 80 different colleges, it was decided that Illinois Institute of Technology presented the set-up most completely meeting the requirements of such affiliation. So on May 23, 1941, the Institute of Gas Technology was duly incorporated, and the following month it became an affiliate of the Chicago institution, Dr. Henry T. Heald, President of Illinois Institute of Technology, and Harold Vagtborg, a member of that college's research staff, becoming president and director respectively. In 1943, Mr. Vagtborg was succeeded in the directorship by John I. Yellott, also of the Illinois staff, and recently L. J. Willien, one of the gas industry's outstanding engineers, and at present chief consultant of the War Production Board on manufactured gas, and an adviser to the Bureau of Mines, has been appointed Assistant Director.

The policies and affairs of the Institute of Gas Technology are directed by a Board of Trustees, of which the first chairman was Mr. Frank C. Smith. Recently this gentleman has been succeeded by Mr. Frank H. Lerch, Jr., President of Consolidated Natural Gas Company, New York City.

The Four Primary Objectives Set Forth

The comprehensive plan adopted for the Institute of Gas Technology was the result of long preparation and careful study.

It was agreed that the program should have four primary objectives:

1. To provide graduate students with thorough training in all branches of the Gas Industry, and to award them master's and doctor's degrees.
2. To undertake basic research.
3. To carry on sponsored applied research investigations in specific problems of the Gas Industry.
4. To collect and disseminate scientific information relating to the technology of gas.

The Plan of Membership

The Institute of Gas Technology is not supported by endowment but by memberships with annual payments based on gross earnings. These payments vary greatly, running from a minimum of $100 to a maximum of $5,000 annually. Voluntary annual contributions of no stipulated amount are also made by interested parties. The Institute receives further large funds with which to carry on sponsored research, revenues from this source for the fiscal year 1944-1945 having been about $137,000.

The immediate aim of the Institute of Gas Technology is to secure, through contractual memberships an annual income of at least $100,000, exclusive of any contributions, and of the funds received from sponsored research.

These sums, in the opinion of the Trustees, will be sufficient to carry on all of the work involved in the Institute's four point program for the present, provide adequate funds for administrative purposes ,and allow, perhaps, for the setting up of a fund for the construction of new buildings, additions to those already constructed, and their furnishing. The money received for sponsored research projects are used for the specific purposes intended, and all excess funds are devoted to the general fundamental problems of the Industry. As yet annual receipts are not at the required level, but the budget is being balanced to conform with receipts.

There are two classes of membership in the Institute of Gas Technology, educational and associate, the first being composed of the trustees and others whom the Chairman of the Board may appoint, and the second, of companies and individuals engaged directly in gas activities, which class embraces utilities, producers, distributors, pipe line operators, manufacturers of appliances and equipment, carbon black producers, and sundry others. Every membership must be approved by the Board of Trustees, and the terms of membership and fees instrumented by written agreement. During the last fiscal year there were six additions to the geenral membership.

Education, the Institute's Paramount Objective

The paramount objective of the Institute of Gas Technology at its formation was the educational program, with the faculty doing certain

Robert Newhall, the Institute's first graduate, doing a gas analysis.

A. D. Singh, Senior Chemical Engineer, investigating gas reactions at high pressures.

basic research as well as tuition. This educational work, which started with great promise, has been temporarily discontinued on account of the war.

In the formulation of the educational program care was exercised to make it mandatory that every student granted a scholarship must be in possession of a bachelor's degree in chemistry, chemical engineering, or gas technology, other requirements being personality, the instinct for leadership, and absolute integrity of character. Thus only the very highest type of man is enrolled.

On entering, the graduate student receives thorough grounding in physical chemistry, advanced mathematics, geology, gas technology and related subjects. He is also required to perfect himself in English, at least to the point of being able to prepare well-written and intelligible scientific and technical reports.

The schedule of work, both scholastic and practical, is so arranged as to engage all the time of every Fellow in absorbing knowledge during his entire four years. For two semesters each year he must apply himself diligently to study, the first three years for his master's and the last year for his Ph.D. degree. Each summer, except for short vacation periods, he is required to work in a different plant directly concerned with the production, distribution, or transmission of gas, or in the manufacture of gas equipment or appliances. Thus he obtains a thorough practical knowledge of the Industry. While thus employed, too, he is required to make regular reports to the faculty outlining the general character of his work, the technical problems involved, and the types of apparatus employed, no such information being released without the express permission of the student's employer.

At the beginning of the September, 1943 term, the graduate student body numbered two third-year, five second-year, and fourteen first-year Fellows, and the group remained intact until the end of the semester. With the ruling of Selective Service that even when engaged in such important work, as admittedly these men were, they could not be exempted from military service if they were of draft age, classes were suspended, and the students have either entered the armed forces or found employment in essential war services or industries. This did not come about, however, until four of the graduate students had received their master's degrees.

Its 21 Fellows Now Carrying on in the War Effort

Now, carrying on in the true American tradition, by playing their parts in this all out war, and contributing in knowledge and action to its winning, the young men are widely scattered. Of the twenty-one Fellows enrolled in September, 1943, nine are in the Navy, associated with radio or radar, seven are serving as technical aids in the field services of the Office of Scientific Research and Development, and the remainder are working on essential research projects, three at Columbia, and three at the Institute.

The work undertaken by these gifted young men has already shown important results, especially that of five of the most advanced, whose findings are expected to broaden appreciably the technical knowledge of the gas industry, especially in the fields of catalytic pyrolysis of hydrocarbons, viscometry, supersonics, heat transfer, and the formation of gas hydrates.

Although research is secondary in the early stages of the student program at the Institute, most of it being undertaken by the faculty, the Fellows are encouraged to assist in this work, which is a good thing, for it must be remembered that some of the greatest discoveries in science, especially in the realms of physics and chemistry, have been made by graduate students working for their Ph.D. degrees.

Director Yellott Outlines Future Plans

In speaking of the interrupted educational program, Director Yellott said:

"Plans for the re-establishment of the educational program after the war are now being formulated. They will include a continuation of the cooperative features which proved to be so valuable in the original program. It is expected, also, that a four-year Ph.D. course will also be given again, with the first three years devoted to class work for the master's thesis, and the last year to research for the doctorate. Work assignments will be so rotated that not more than three of the four classes will be on the campus simultaneously, and so that at least one group will always be at work in the Gas Industry. Moreover, courses will be staggered so as to make it possible to borrow for short periods outstanding executives of the Gas Industry to conduct courses in their own particular fields of endeavor."

Associate Director L. J. Willien is one of the best known gas men in the country. His talents are expected to benefit the Institute greatly.

Robert B. Harper, one of the Institute's trustees, addressing a seminar of staff members and fellows.

Neither Trustees Nor Faculty Lose Faith

Naturally the curtailment of its educational program, the first objective of the Institute, caused disappointment to the Trustees. However, they and the faculty have not permitted themselves to lose their faith and enthusiasm for the organization that beyond peradventure is destined to play such an important role in the future of gas. Indeed, the intensification of its research activities has not in any way affected its other objectives. As has already been stated by Director Yellott, preparations are even now under way for the immediate resumption of the educational program, and it can be said that work on the other objectives is proceeding smoothly, and with dispatch.

Library to be the Finest in Country Devoted to Gas

Take the Library, for example, so important to an organization of this character. No effort is being spared to make it the finest in the country devoted exclusively to the technology of gas. To this end funds have been set aside for additional space, and for the uninterrupted acquisition of books and periodicals. More than 4,000 volumes have been accumulated, and nearly a hundred American, Canadian and foreign periodicals are subscribed for. When peace returns every effort will be made to increase the number. It is expected that a research librarian will be appointed in due course, and that before long the Institute will begin to publish a scientific journal of its own. The Institute contemplates also the collection and indexing of all catalogues of the manufacturers of gas equipment and appliances. In addition to their own library, students, faculty, and members enjoy the privilege of free access to the Illinois Institute of Technology and John Crerar libraries, Chicago.

War Brings Intensification of Research

One of the immediate results of the forced suspension of the educational program has been the intensification of research, both basic and sponsored, and this spurring of effort has had definite and important results. Especially has progress in basic research been notable, giving promise of results that will return many times the monetary investment involved. As formulated by its Board of Trustees, the Institute's underlying policy of basic research is to use its own funds for the carrying out of purely scientific investigations, the results of which are made available to the entire industry.

It should be remarked, in this connection, that it is a requirement of the Institute that all patentable discoveries that are made in its basic research projects shall become its exclusive property, and that the patents covering the same shall be licensed without cost to the member companies on equal terms, these and the conditions governing licenses of patents to non-members being left to the discretion of the trustees, who also have the right to determine how the funds so received shall be allocated.

Some of Institute's Research Work Outlined

Some of the more important work underway in the Institute's laboratories is described briefly in the following paragraphs. It will be understood, of course, that the various projects can be touched upon only in broad outline, and that in most cases sponsored investigations can not be mentioned at all.

A major problem facing the Gas Industry is the development of a new technique for the gassification of coal. In the past, emphasis has been placed on the refinement of existing methods of producing manufactured gas. The Institute feels that the time for change has come;

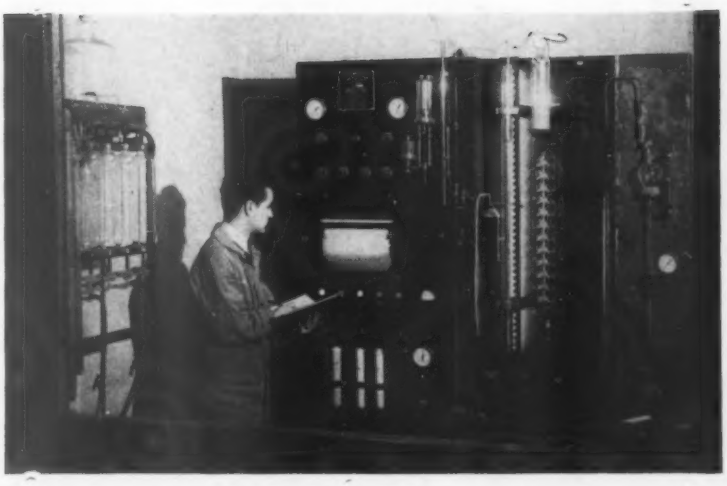
that new practices are necessary, and that such practices must emanate from young and vigorous scientific minds, uninhibited by the trammels of tradition.

A knowledge of its fundamentals is one of the cardinal needs of the gas industry, especially the inherent properties of its raw materials, particularly as they relate to the production of low-cost high-btu gas from any grade of coal.

Pulverization Studies Promise Great Results

At the present time, the Institute of Gas Technology is carrying on a broad program of research and development in the continuous production of manufactured gas from solid fuels. Apparatus is being assembled for the study of two distinct methods of attaining this end, with powdered coal as the starting fuel. The program provides for the closest examination of the effect of fundamental variables, with particular consideration of the effects of operations at high temperatures and pressures, made possible through new alloys and materials. Ultimately, the Institute's scientists hope to be able to produce a high heating value gas directly from coal, the dream of the Manufactured Gas Industry.

The Institute is attempting to perfect an entirely new technique for the pulverization of minerals, which it is expected, will be effective not only with coal, but with other materials also, such, for example, as oil shale, of which this country has vast deposits, those of the Rocky Mountains alone being believed sufficient to supply the nation's needs of oil for more than half a century to come.



Operating the Podbielnik Hyd-Robot is Dr. Charles H. Riesz, supervisor of the Catalytic Section.

The equipment being designed by the Institute's technicians is expected to be both more efficient and more economical to operate than the conventional type, and perfected, may revolutionize completely the practices of industries that now employ mechanical pulverizers.

Fluidizing Being Closely Studied by Institute

The Institute of Gas Technology is paying very close attention, also, to the subject of fluidizing, which has become important to the petroleum industry through cracking by a catalytic process.

It is the petroleum industry chiefly that has pioneered in fluidizing, this new and extraordinarily efficient method of gas-solid contacting. The technique of the process is about as follows: A vessel containing a mass of powdered solids is subjected to a rising current of gas, introduced at the bottom, which fluidizes it into a condition like quicksand, with the characteristics of boiling. In this condition, it can be readily handled as a fluid, permitting it to flow through valve-controlled pipes to a tank under conventional conditions of liquid level control.

The Institute of Gas Technology early appreciated the importance of this new method of fluidizing, and has been most active in undertaking basic research that gives promise of developing its scope and importance.

One of the feminine members of the Institute's staff, Miss Frances L. Estes, graduate chemist.

The Importance of the Fischer-Tropsch Process

During the past few years radical new methods for the continuous production of gas for the Fischer-Tropsch synthesis process have been developed in Europe. Many of the fundamentals of these methods can be applied with success in this country, bearing in mind, of course, that the problems here are quite different, chiefly because the raw materials and the resultant products are wholly dissimilar, as are the engineering balances and commercial factors.

A number of projects concerning the improved utilization of natural gas are now actively underway in the Institute's laboratories, particularly as they concern the application of the Fischer-Tropsch process to the production of higher hydrocarbons through the employment of specific catalysts. This important work is being carried out under the supervision of Dr. F. H. W. Komarewsky, a member of the faculty of the Illinois Institute of Technology and an outstanding authority on catalysis,

Here are foregathered a group of the supervisors of the Research Section. Reading from left to right they are: Drs. C. H. Riesz, catalysis; V. S. DeMarchi, metals and refractories; J. J. Sebastian, coals and gassification; J. D. Parent, chemical engineering; S. W. Martin, chemistry, and Messrs A. D. Singh, coals and gassification, and John Massier, appliances.

and Dr. C. H. Riesz, of the Institute's staff.

The Fischer-Tropsch process was invented in 1923 by Franz Fischer and Hans Tropsch, German scientists, but its development was relatively slow until the late thirties, when the clouds of war commenced to darken the skies. In 1939, the last year of record, Germany was producing about 2,500,000 barrels of liquid fuel, and no doubt the consumption would be very much greater at present.

Japan is using the process as is Great Britain to a limited extent, and there would seem to be no reason why it could not be found economically practical in this country, especially when production costs have been lowered and the reaction so controlled that it will be possible to produce more valuable products than at present. The wide utilization of the process by the manufactured gas industry should then prove feasible.

In the Fischer-Tropsch process of producing oil from water gas, hydrogen and monoxide are passed over a suitable catalyst to produce liquid hydrocarbons. It is believed that Germany, where the process originated, is now obtaining most of its oil in this way. The process has future possibilities, it would seem, for both manufactured and natural gas companies. Present water gas equipment would be utilized in part, but additional equipment would be necessary also. The utilization of existing equipment in the process of producing oil from water gas is predicated, of course, on the assumption that in wintertime such machinery would not be available for this purpose because of the preponderant seasonal demand for gas.

Various Methods of Gas Analysis Being Studied

Of great significance to the Industry is the extensive work in gas analysis now being carried on in the Institute's laboratories. Analyses are made chiefly with the Gockel apparatus, which represents a distinct refinement over the conventional model, and, operated by a skillful technician, can determine with exactitude the composition of practically any gas stream. This particular equipment was designed by Dr. Riesz, and constructed in the Institute's own machine shops, which are equipped to do everything required, including all kinds of metal working. This might be a good time to state that there is no paucity of equipment at the Institute of Gas Technology, although much of it is on lend-lease from the Illinois Institute. Its eight laboratories lack nothing that would seriously hinder the activities of its research workers. It has its own instrument room, a feature of which is a Podbielniak Hyd-robot, and available to it also, is the famous electron microscope of the Physics Department of the Illinois Institute of Technology, which has recently been used to determine the ultimate particle size of carbon black—the X-ray diffusion equipment of its affiliated Armour Foundation, and all the mechanical facilities of both. The Institute has its own photographic equipment, drawing and blueprint rooms, and a glass blowing department, which produces all the special equipment for its laboratories.

Low-Cost Gas Plant an Ultimate Aim of Institute's Chemists

One of the chief aims of the Institute is to develop plans for a plant that will operate at a low load factor without penalty, so that the peaks of production can be economically met. The methods employed would represent a distinct departure from conventional practices. Under existing conditions, much of the equipment to provide this standby emergency gas would be used only for short periods in wintertime, making the investment rather than the operating cost the dominant factor. How best to utilize this idle equipment is being studied carefully. The answer, the Institute feels, may lead to the production of

raw materials from gas for the chemical industry, already an important activity of the natural gas business.

Another of the objectives of the Institute's program of basic research is the production, through catalytic reaction, of additional products from natural gas.

Compressor Power Requirements Being Investigated

Studies are also being initiated to determine what are the exact compressor horsepower requirements for natural gases, this being especially important in the recycling processes.

Domestic and Industrial Applications Under Review

Thought also is being given to the question of new domestic and industrial applications of gas, one of the more important being that of the supersonic radiation generator, which produces both heat generation and sound waves. It promises a field of usefulness for the Gas Industry because it provides a possible means of applying heat internally without electronic equipment. It offers possibilities in the removal of dust from gas streams, always a problem in the manufacture of gas.

Considerable thought is also being given to the problem of summer air-conditioning through an absorption process. This autumn, too, the Institute intends to initiate basic research on problems associated with radiant heat transfer and ignition phenomena.

The Institute's Activities In Applied Research

Of great importance to the Gas Industry are the activities of the Institute of Gas Technology in the broad field of appliance research. Through improvements already effected, it is believed that the appliance manufacturer will have at his command the tools to meet successfully the competition he must expect from the so-called electric kitchen of the future, now being so widely publicized.

As is generally known, the Cleveland laboratories of the American Gas Association have made important contributions to the science of combustion, particularly as applied to small gas burners and methods of burner control. Their outstanding work is proving of inestimable value in aiding the Institute's technicians to solve many of the problems peculiar to this phase of gas practice.

Appliances for domestic cooking are being investigated, and the Institute is at work on the development of a cooking machine which it is believed may prove of great advantage to the range manufacturer. This project, because of its importance, has been placed under a special committee of the Institute's Trustees, headed by Mr. Everett J. Boothby, Vice-President and General Manager of the Washington Gas Light Company, Washington, D. C.

The Institute's machine shop is under the direction of Charles Johnson, veteran toolmaker, shown here.

Importance of the Institute's Sponsored Projects

Outstanding as have been the accomplishments of the Institute of Gas Technology's basic research program, no less important have been the results of its sponsored projects, most of which have been undertaken for its member companies. In enlisting the cooperation of the Institute's scientists these companies, regardless of size, bring to the solution of their intricate problems a larger and more widely diversified staff than even the largest of them could maintain independently. There is the added advantage that specific problems can be brought to the Institute as though to a private research organization, with the full assurance that all developments will be kept in the strictest confidence, and that patentable inventions will be the absolute property of the sponsoring company. In some instances, sponsored research is carried on for the benefit of the Industry as in the case of the study now being made of the organic sulphur problem, which underwritten by the Rochester Gas & Electric Company and the American Gas Association, is to be released to the Industry.

The above referred to organic sulphur work has been going on in the Institute's laboratories for more than two and one-half years and, definite results in this difficult problem both in sulphur determination and its removal are being obtained. It is quite possible that the intensive studies now being made, may result in the development of an entirely new

Henry Hakewill, of the Chemistry Section, performing a step in the mass production of organic sulphur determinations.

method of removing all of the sulphur impurities in gas, an achievement of large consequence indeed.

Even Broader Plans For Research After the War

It has been found necessary to postpone temporarily a number of suggested projects because of the shortage of technicians, but this emergency condition is expected to be of short duration because the Institute's staff is gradually being built up by the employment of returned veterans with scientific backgrounds, and the use, wherever feasible, of technically trained women. The Institute's staff is capable and enthusiastic, and it is expected that it will be able to meet efficiently every demand of the future.

In the projects that have been undertaken by the laboratories of the Institute of Technology there is little drudgery, but a great deal of glamor and interest. Old methods are frequently found utterly inadequate and these must be superseded by new ones, more sensitive to the precisional requirements of modern science.

Intermittently, also, it expects to hold conferences, open to all members and others interested in gas, in which the problems of the industry will be discussed in open forum, and from every possible angle.

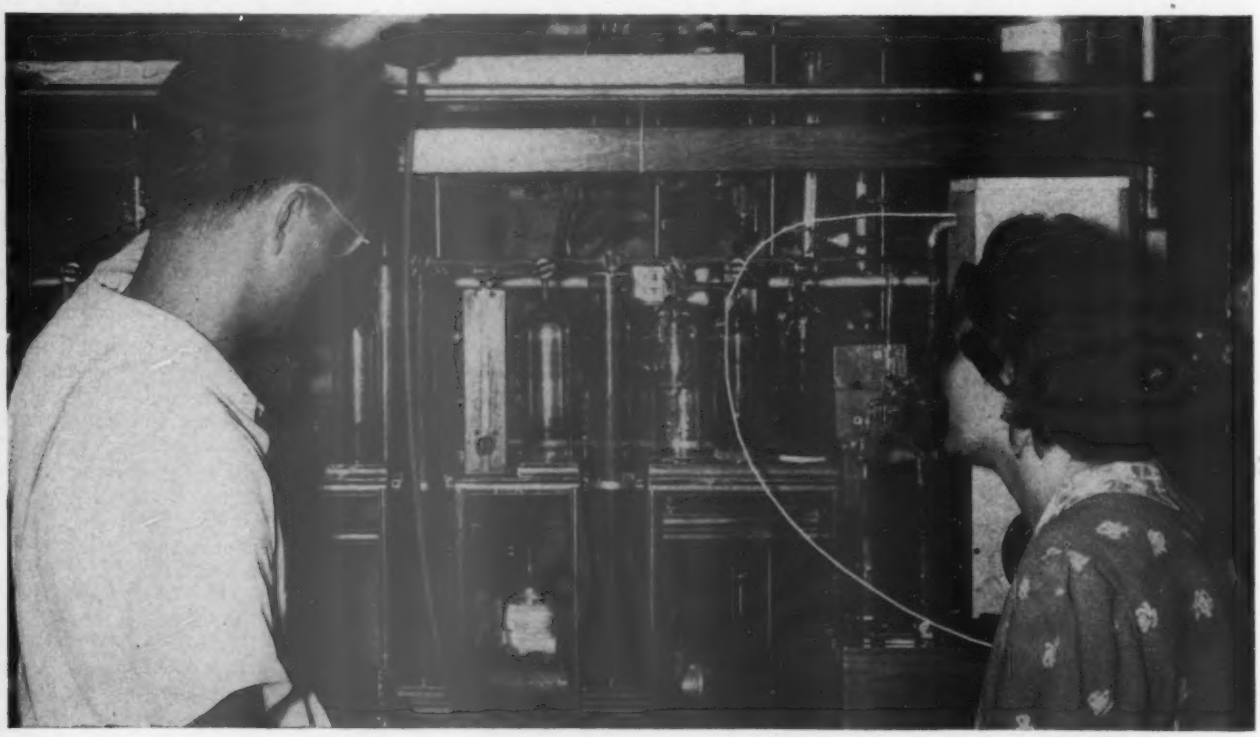
Institute Feels That Research Must Be Backed by Sales Activity

However, the trustees of the Institute of Gas Technology are fully alive to the fact that neither research alone nor the dissemination of technical information will be sufficient to enable the Gas Industry to hold its own in the face of acute competition. Both of these are helpful, but they must be backed up by intelligent sales promotion, including cooperative and company advertising and publicity. Let each utility teach its own community the object lesson of gas as the world's most economical source of heat.

In the future, without in any way neglecting its other aims, the Institute of Gas Technology is expected to go even further than it yet has in the realm of research, not only in its basic and sponsored work, but in the coordination, insofar as is practical, of the research efforts with the Industry. As is generally known, the average gas company controls only a small part of the potential heat energy load in the territory it serves. Reduction in production costs and improvement in the quality of the fuel that would be directly attributable to the Institute's research and technical contributions will permit the effort to increase annual sales.

The Institute and the Gas Industry Can Go Forward Together

It will be seen from the foregoing that the Institute of Gas Technology has become a vital force in the gas industry, and may be expected to grow in stature and in usefulness with the years. Young, virile, and imaginative, it offers a challenge that the industry cannot accept too quickly, demonstrating that, like other great divisions of the national effort, gas is awake to its needs, and its interests in maintaining its position of service to all.



Dr. Charles Riesz, Supervisor, Catalysis Section, instructs Miss Eleanor Landon in the use of the Göckel gas analysis apparatus. This complex piece of equipment was designed and constructed in the Institute's own shops.

WARTIME EXPERIENCE

A KEY TO POSTWAR GAS PURIFICATION

Warfare requirements forced into bold relief the urgent importance of a thoroughly effective gas purifying material.

Pure—EXTRA PURE—Gas was essential for dependable results in melting, fusing, hardening, welding and working metals for innumerable purposes related to defensive and offensive warfare.

Under this pressing necessity, many gas plants used LAVINO *ACTIVATED* OXIDE for the first time, thus establishing a means of saving time, labor and other production costs.

This wartime adoption of an improved, more economical gas purifying material will continue paying generous dividends in peace time. Dividends in gas more worth its production cost; dividends in cash savings on the purification process.

Anytime—in war or in peace—is a good time to inaugurate those economies by adopting

LAVINO "ACTIVATED" OXIDES

GREATER CAPACITY . . . GREATER ACTIVITY . . . LESS OXIDE REMOVES MORE H_2S!

Supplied unmixed; or ready mixed in "Sponge" form.

E. J. LAVINO AND COMPANY 1528 WALNUT ST., PHILA. 2, PENNA.

SELLING YOUR DEALERS on Selling cp

AMERICA'S NO. 1 POSTWAR PROBLEM
This Plan WILL MAKE MONEY FOR YOU
THE BUYING GUIDE OF 19,000,000 WOMEN!
FOR TOMORROW'S GLAMOROUS KITCHENS
20 Manufacturers
WILL MAKE GAS RANGES BEARING THIS SEAL
THE IDEA THAT Revolutionized Cooking
MODEL HOME EQUIPPED WITH cp GAS RANGE
POST-WAR SALES Start here
AMERICA'S NO. 1 POSTWAR PROBLEM
...THE IDEA THAT PUTS MONEY IN YOUR POCKET!
GAS

Better Dealer Relations Start Here

In 15 major trade publications, full page advertisements like these are selling your electric and gas appliance dealers, architects and builders on "CP"* Gas Ranges.

Your dealers are reading and writing in — they want to know *more*. Inquiries PROVE IT! Follow-up if you want aggressive dealer sales of "CP" Gas Ranges in your town after the war. The big colorful "CP" Business Building Plan Kit will help you. Order a supply today—one for every dealer.

* Registered Trade-mark of the Association of Gas Appliance and Equipment Manufacturers

• • •

"CP" advertisements appear regularly in:

AMERICAN BUILDER • AMERICAN GAS JOURNAL ARCHITECTURAL FORUM • ARCHITECTURAL RECORD • ELECTRICAL DEALER • ELECTRICAL MERCHANDISING • GAS • GAS AGE • GAS APPLIANCE MERCHANDISING • HARDWARE AGE HARDWARE RETAILER • HOUSE FURNISHING REVIEW • NATIONAL FURNITURE REVIEW RETAILING HOME FURNISHINGS RETAIL MANAGEMENT

These Leading Manufacturers Will Make Matchless "CP" Gas Ranges For You

A-B STOVES, INC.
AMERICAN STOVE CO.
CALORIC GAS STOVE WORKS
CRIBBEN & SEXTON CO.
DETROIT-MICHIGAN STOVE CO.
THE ESTATE STOVE CO.
GLENWOOD RANGE CO.
JAMES GRAHAM MFG. CO.
GRAND HOME APPLIANCE CO.
HARDWICK STOVE CO.
A. J. LINDEMANN & HOVERSON CO.
O'KEEFE & MERRITT CO.
ROBERTS & MANDER STOVE CO.
GEO. D. ROPER CORP.
STANDARD GAS EQUIPM'T CORP.
THE TAPPAN STOVE CO.
WESTERN STOVE CO., INC.

IN CANADA

CLARE BROS. & CO., LTD.
GURNEY FOUNDRY CO., LTD.
MOFFATS, LTD.

USE THIS COUPON TO ORDER KITS!

Assn. of Gas Appliance and Equipment Manufacturers
60 East 42 Street, New York 17, N. Y.

Please forward_____copies of the "CP" Business Building Plan Kit at 30¢ each f.o.b. New York City

Name_____

Company_____

Address_____

City_____ State_____

Gas Industry Problems

By
George H. Smith
Assistant Managing Director
American Gas Association

I AM INDEED happy to have this opportunity of talking to the members of the gas fraternity of the Pacific Coast. This is my first visit to the Coast and furthermore this is my first official talk since my recent connection with the American Gas Association.

As some of you know, an important meeting in New York keeps President Acker, Vice President Robinson, and Director Forward there and it is with sincere regret that they are unable to be with you today. All of them have specifically asked me to extend their greetings as well as those of the officers and management of the Association.

Yours is an outstanding trade Association and its record of achievement over fifty-one years is one in which the entire gas industry takes pride. I congratulate you on that record and I anticipate the help and guidance that will continue to flow from an organization like yours.

My work with the Association as the Director of its Natural Gas Department makes it necessary that I spend most of my time on natural gas problems. I have had little opportunity yet to exercise what executive prerogatives may be involved in being an Assistant Managing Director, so I hope you will excuse me if I bear a little heavily on natural gas problems.

Plan for Research and Promotional Development of the Gas Industry

I would like to touch first however on a problem that is one involving the entire industry and it has to do with postwar activities. As many of you know, the Executive Board of the Association authorized the presentation of a plan designed to carry out the recommendations of its Postwar Planning Committee. A special committee was organized and it has now presented a program for the next three years.

Briefly the plan sets up an expenditure of an additional one million dollars per year, beyond present expenditures, for three years for enlarged Research and Promotional Development of the gas industry.

George H. Smith
Photo Blackstone Studios

This annual budget is divided as follows: $600,000 for Research, $200,000 for National Advertising, and $200,000 for a Promotional Bureau at Headquarters and Sales Promotional Programs.

A splendid program of increased research activities, and sales promotion and development are set forth in the plan. The costs of the plan are divided between manufactured and natural gas on a basis to give effect to the greater amount of research proposed for the benefit of the manufactured and mixed gas companies. A tentative division of costs allocates about one-third to the natural gas companies and two-thirds to the manufactured and mixed gas companies.

The status of the report is that it is to be presented at a Board meeting on September 13 and will come up for industry action at the annual meeting in October.

The Plan of the Committee

As a justification of the plan the committee has this to say.

"The gas industry has reached a critical point in its need for research and promotional development. Changing economics and the rapid advances of competing services have already had a marked effect upon the industry's position in the cooking and heating fields, and it is clearly indicated that the place of gas as the ideal fuel will be even more seriously threatened in the postwar world. The present position and future needs of the industry have been ably and comprehensively analyzed by the Association's Postwar Planning Committee which has presented its findings in a series of reports already distributed to the industry. The Committee is continuing its studies but its report No. 3 issued in April, 1944, submitted a summary of its work to date with 'Recommendations to the Gas Industry.' The recommendations are clear-cut and challenging. They are based on the most thorough and authoritative study of the gas industry and its problems that has been made in its entire history. The conclusions represent the thinking of the most highly qualified men available in the industry and have been checked and accepted by a large number of the industry's most able executives.

"The Committee finds that the economic advantage which the gas industry has heretofore enjoyed over other modern fuel services has shown a downward trend for some years and that such trend may be accelerated during the postwar period. In addition, it finds that the aggressive advertising and promotional efforts of the electric industry, which have far outweighed those of the gas industry and will be intensified after the war, have had a material effect upon customer preference and the relative position of gas vs. electricity as the modern fuel.

" 'The record shows that the average domestic electric "use" in the past decade has increased approximately 70%, whereas domestic gas "use" (including space heating) in the manufactured gas industry shows no gain, and in the natural gas industry only 14%. Information further indicates that the electric industry postwar planners contemplate doubling their domestic business by 1950, should the war end as presently expected, and it should be evident

that this can only be accomplished by inroads on the gas industry.'

"The remarkable growth of the electric industry has been accomplished through extensive and unremitting research, the continuous development of new and improved appliances and the intensive advertising and promotion of the 'electric way' as the modern way of living. In competitive fields the efforts of the electric industry have been effective in spite of the natural advantages and superiority of gas for domestic services, indicating that to date the gas industry has been outadvertised and outpromoted by its electric competitor. The industry is already on notice that the large electric manufacturers intend to further intensify their promotion of electric range sales in the postwar period. The gas industry will be faced, therefore, with the keenest competition in its history and must in its own interest find the means not only to develop new markets but to hold the business which it now has.

"The position of the gas industry is no different than that in which other major industries have found themselves as a result of economic change or too great reliance on price advantage. In every instance the solution has lain in improvement of the product and aggressive promotion of the business. These things have been accomplished in numerous instances through increased expenditures for research, effective advertising and intelligent promotional effort based on a thorough knowledge of what the public wants and will buy. Organized efforts along these lines are essential to the future of the gas industry.

"It is obvious that the ultimate relationship with the users of gas service must rest with the individual units of the industry and that the American Gas Association cannot direct or supervise the activities of its member companies. It cannot solve the postwar problems of individual companies but it can conduct and coordinate those activities of the industry which are common to all and which can be more effectively carried out by group action. In addition, however, the Association must be in a position to perform services for the gas industry which in the electric industry are to a great extent performed by large manufacturers but which cannot be performed by the comparatively small manufacturers of the gas industry. The fact is that because of the competitive situation between the large number of relatively small manufacturers in the gas appliance field, few, if any have been in a position to adequately finance the research and promotional needs of the industry by including such costs in the prices of their appliances. For this reason the gas utility industry itself must assume a large portion of the responsibility for research and promotional effort which in the electric industry is assumed by a handful of large manufacturers.

"It is proposed, therefore, that the gas industry provide funds for increased research, national advertising and publicity and general promotional effort, to implement the recommendations of its Postwar Planning Committee. . . .

"The future of the gas industry is in its own hands. What that future may be depends to a large extent upon the initiative, intelligence and effort which the industry exerts in its own behalf. Rising costs and aggressive competition have created problems which require immediate and effective action. The industry must unite in a determined effort to improve the economics of its operations and to promote its business so that the possibilities of gas service may be realized to the fullest extent and the position of the gas industry may be strengthened as an important factor in our social and industrial structure. Such action on the part of the industry will not only preserve and extend its markets but will have a direct bearing on the ability of the industry to attract new capital on more favorable terms in the future than have prevailed in the recent past.

"It is obvious that financial interests are attracted by the securities of those industries which show a progressive spirit and which continually safeguard their future through substantial expenditures for research and aggressive promotional effort. It is essential, therefore, that the gas industry in its own self-interest demonstrate its faith in the future of its business by appropriating adequate funds for research and promotional development."

That, gentlemen, is the committee's proposal. I hope you will all give it your most careful consideration when the plan comes before you.

Natural Gas Problems

Now a word about natural gas problems—and I can only touch on more important ones. The industry is facing today some added attention on the part of the Federal government. Bills before the Interstate Commerce Committees of both houses advocate a study of the whole conservation problem of natural gas. A debate is in progress as to who should undertake the study with the Federal Power Commission and the Department of the Interior making bids for favor. It is anticipated that action will be taken upon these bills this fall. Thus the industry will face a long period of study which would aim to make recommendations in the production, transmission and distribution of natural gas in its broad aspects of the public interest. The effect of this may seriously affect some companies if some action isn't taken on the part of the industry to be prepared to lend authoritative information to whatever government agency undertakes the task. Such effort is necessary if we are to protect those whose energies and money have brought such companies to their present economic position. It is important that such a study include a careful consideration of the fact that a large segment of public interest is involved when we consider the interests of employees of and the investors in progressive and successful utilities.

Thus, as I view it, the industry can best serve its own interests and that of the general public if men who know the business best take an active interest through the Association in the activities of any agencies charged with studies of conservation of natural gas.

Along these same lines the natural gas industry has recently been faced with a new problem that has arisen in the granting of certificates of necessity and public convenience under the Natural Gas Act. A large natural gas company was recently denied a certificate (without prejudice) to add pipe line facilities to its system and increase its capacity by 21 million cubic feet of gas per day. In denying the certificate the Federal Power Commission opinion stated as follows: "In view of the limited natural gas reserves shown in the record to be available to the applicant and thus prevent rapid rate of depletion . . . it is necessary and appropriate in the public interest that such natural gas resources be conserved insofar as possible for domestic, commercial and superior industrial uses." This problem is also one that bears on conservation and will probably be made a part of the natural gas study which Congress will soon pass upon. In the meantime a company is forced with the necessity of proving "superior" uses for its fuel before a certificate is granted and a federal formation of policy is already in the making.

To meet this challenge a committee

of the Association has been appointed which will meet on September 13 in New York City under the chairmanship of Mr. Walter Beckjord to discuss all the phases of this question in the hope of developing among us an industry policy.

We are accused by some spokesmen of Federal agencies of being disciples of the old theory of the three "gets"—"get in"—"get ours"—and "get out." Operation under such a theory has already been disproved in the fine records of the managements of our natural gas companies; indeed many of them would well ask "get what?" as their balance sheets are testimony of how little reward they really slave for.

That brings us to another point in this connection which is that of, how superior is natural gas as a fuel and as such what is it worth? I confess that I have no fixed ideas on this as it involves a lengthy study of competition, rates, etc. Natural gas which is otherwise wasted might better be used as a fuel at any price whether it is considered inferior or superior. On the other hand I think most enlightened managements would pursue a policy in the marketing of their product at a superior price if old markets can be held and new markets obtained and the whole scheme had a beneficial effect on operating costs and net revenue. That would seem obvious. The difficulty of the whole problem is to get some policy which would not injure some of our companies and yet have public acceptance.

These are pressing problems now before us and our hope is that we can at least get the natural gas industry to present a solid front on what our positon should be in the solution of these problems. That does not mean that we can actually agree on a plan of our own. It would be a long step ahead if we could, but if we can present a solid front on what we can agree on then we have made a real contribution to the solution of these problems. If such procedure is not taken then no amount of convention oratory will remedy the plans and policies that may be made for us.

Unity and Harmony

Another matter which I would like to touch upon is that of unity and harmony within the entire gas industry. Many of our problems of the future will call for the greatest skill as an industry in holding our place in the fuel markets of this country and making our plans and aims known to the public and to those governmental bodies which are destined to control many phases of our business. Never before has the necessity of unity of purpose and harmony within our ranks been more important. As you know, the American Gas Association has now been reorganized. It is the sincere purpose of those who labored on the plan of reorganization to bring harmony among us and unity for the industry. The new plan of organization may not be the last word in the type of organization which many might desire but it is the best thought of men who labored diligently on it and is at least a start in attempting to place proper importance on each branch of the industry. It is not an attempt to set up one department of the industry against another and in making our plans for the future operation of the Natural Gas Department we must be ever mindful of the effects of our procedures on the industry as a whole.

Now more than ever the gas industry needs a united front and no segment of it has the power and strength of the whole. We must work as one to place the gas industry of the future in its rightful place in industry and in the home.

Presented at the 51st Annual Meeting Pacific Coast Gas Association, Los Angeles, September 13-14, 1944.

MEN ON A MISSION . . .

The mission is . . . *crushing defeat of Axis terrorists on their own shores.* And every move we make at PAYNEHEAT today is designed to hasten that result! ★ When Victory comes, we'll again turn our "Paynestaking" workmanship to *furnaces,* featuring . . .

Payne ZONE-CONDITIONING

Post-war successor to the central furnace! Quick, clean gas heating and fresh air circulation, *controlled by zones or individual rooms.* ★ Every family that builds or remodels will be a Zone-Conditioning "prospect" for PAYNE Dealers. ★ But now, let's back those *men on a mission* in every way we can! Buy more War Bonds.

U. S. Signal Corps Photo

ONE FUEL DOES EVERYTHING

PAYNEHEAT

NEARLY 30 YEARS OF LEADERSHIP

Payne FURNACE & SUPPLY CO., INC., BEVERLY HILLS, CALIFORNIA

What will the gas range of

DISCUSSION NO. 8

Oven Burner Fittings will be Standardized

Too often before the war, ranges just "growed up" like Topsy, little or no attention being paid to standardization. For example, oven and broiler burner fittings were produced in a wide variety of shapes and sizes—a range manufacturer often using a different one in every model in his line.

We predict that on the postwar gas range oven burner fittings will be standardized—standardized to the extent that one design will be used for an entire line of ranges. A universal fitting must provide maximum gas capacity . . . superior injection . . . lifetime service. It must be easy to assemble to tubing before being put in the range, thus permitting subassembly and testing for gas leakage. The subassembly must be easily fitted in any position in the range without removing the orifice cap. Such a fitting is available.

The patented Wyman No. 36 Oven Burner Orifice Fitting was designed to meet these requirements. Precision-machined from a brass forging, this fitting will give superior service for the life of the range. The orifice end of the fitting easily slips through a ¾" diameter hole in a simple, inexpensive sheet metal bracket, and when the locknut is tightened against the bracket the orifice is held in perfect alignment with the venturi throat of the burner.

With only one design to stock, a range maker's inventory is reduced and further, being a standard item, the Wyman No. 36 Oven Fitting can be had promptly—thus eliminating the necessity of carrying a large variety or a large quantity of fittings in stock.

This time and money saving step of oven fitting standardization will undoubtedly be taken by the majority of range manufacturers on their postwar ranges. It will mean much to the gas industry.

HARPER-WYMAN COMPANY

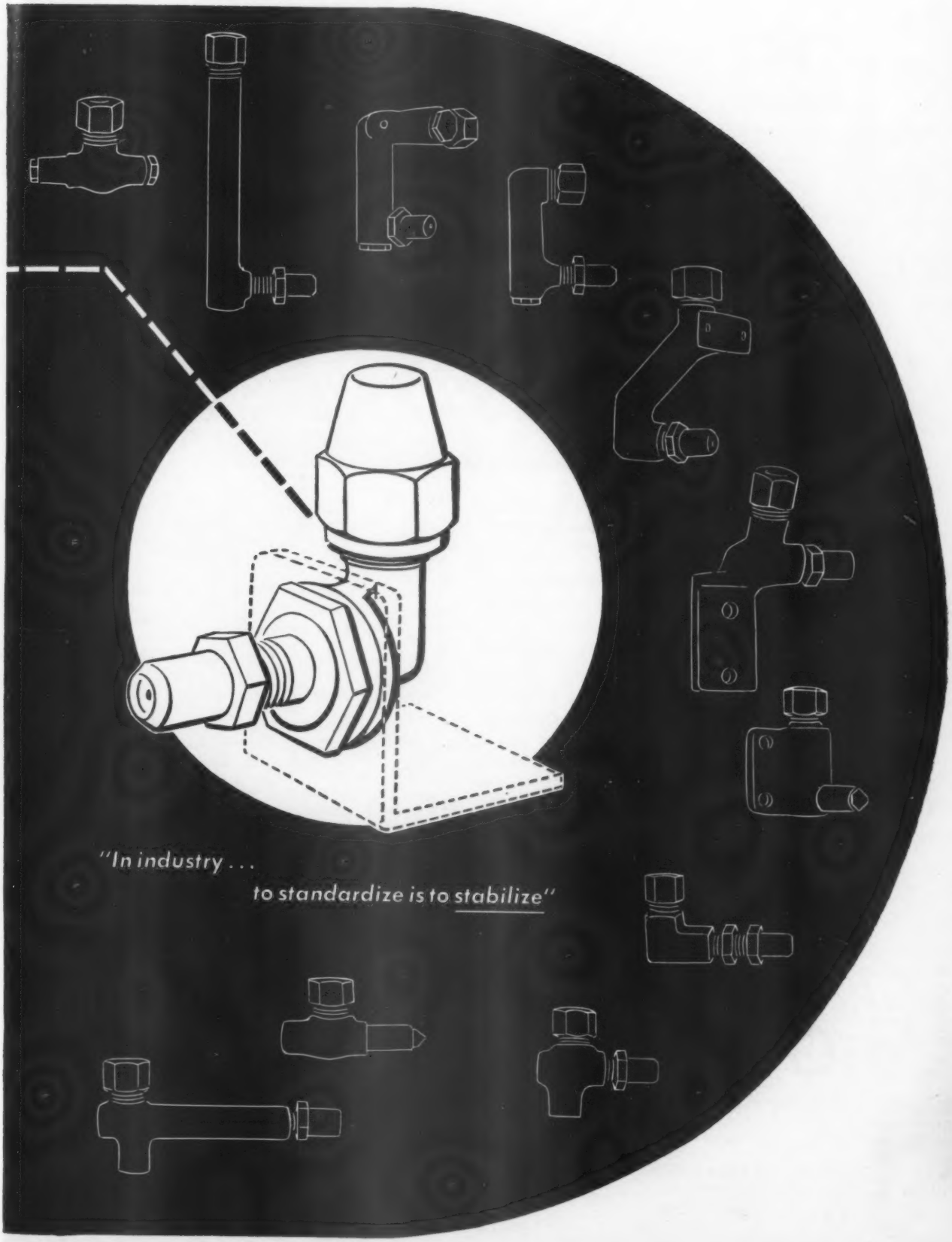
8562 VINCENNES AVENUE
CHICAGO 20, ILLINOIS

ARMY E NAVY

HARPER BURNER SYSTEM

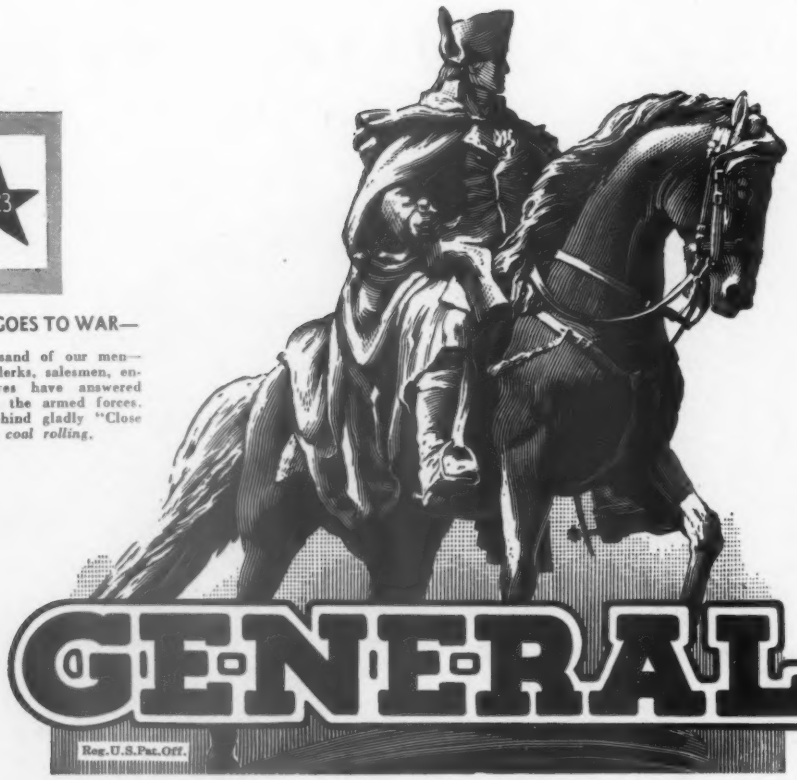
2-burners-in-1

the future be like . . . and WHY?



GENERAL COAL GOES TO WAR—

More than one thousand of our men—miners, machinists, clerks, salesmen, engineers and executives have answered the call to serve in the armed forces. Those of us left behind gladly "Close Ranks" to *keep the coal rolling.*



GENERAL

Reg. U.S. Pat. Off.

RODA — High grade gas, by-product and steam coal from Wise County, Va., on the Interstate Railroad.

DENDRON — High grade gas, by-product, steam and domestic coal from Wise County, Va., on the Interstate Railroad.

STONEGA — High grade, high volatile steam and by-product coal from Wise County, Va., on the Interstate Railroad.

PREMIX STOKER — A laboratory controlled product blended to meet exacting stoker requirements. From Wise County, Va., on the Interstate Railroad.

COKE — Roda and Stonega from Wise County, Va., and Connellsville Coke from Pennsylvania.

CRITERION COAL — High grade gas, by-product, steam and domestic coal—Pittsburgh seam from Irwin Basin, Westmoreland County, Pennsylvania, on the Penna. Railroad.

CROZER — Genuine Third Vein Pocahontas from McDowell County, W. Va., on the Norfolk & Western Railroad.

Admiralty Coal — Genuine New River Smokeless, Beckley or Sewell seam from Raleigh County, W. Va., C. & O. and Virginian Railroads.

Old Kentucky — Hazard No. 4 and No. 7 steam and domestic coal from Wiscoal, Knott County, Kentucky, on the L. & N. Railroad.

GENCO — Steam and domestic coals from a number of producing districts.

ANTHRACITE — Premium and standard qualities in the entire range of Anthracite burning characteristics.

Capable engineering personnel and the experience gained through long and varied marketing activity assures proper application of one of the above brands and effective servicing of any fuel requirement.

General Coal Company

123 SOUTH BROAD STREET . . . . . PHILADELPHIA, PA.

Branches

BLUEFIELD, W. VA.
BOSTON
BUFFALO
CHARLESTON
CHARLOTTE, N. C.
CINCINNATI
DETROIT
NEW YORK
NORFOLK
PITTSBURGH

RECENT COURT DECISIONS
Affecting Gas Utilities

How to Avoid Motor Vehicle Damage Suits

By
Leo T. Parker
Attorney at Law
Cincinnati, Ohio

RECENTLY, the matter of gas company damage suits for automobile accidents has loomed surprisingly important. Of course, when it is considered that gas company officials and employes operate a multitude of motor vehicles it is clearly apparent that this subject of law, and definite plans for avoiding liability, is important to all readers. And, therefore, the ultimate purpose of this article is suggestions of how gas company officials and employes may, by practical plans reduce company liability for injuries resulting from operation of motor vehicles. Moreover, modern higher court decisions will be cited to verify all explanations of law.

Instruct Your Drivers

First, it must be admitted that the most important and fundamental plan likely to eliminate expensive suits of this nature is detailed instructions to drivers. It must be remembered that gas company officials who conduct their business correctly, from a legal standpoint, may avoid a great majority of suits which would be filed against companies whose officials do not anticipate suits and fail to plan in advance in a manner likely to establish valuable testimony that will win the suits. In other words, persons who cannot win a legal controversy will not file a suit, whereas if officials have left the company open to clear liability and have not by prearrangement prepared to win unavoidable suits, the chances of having to defend suits are greatly increased.

Modern Law Reviewed

An important question faced by all corporation officials is: What can I do to prepare in advance to win suits filed by persons injured as consequence of operation of gas company cars?

We shall proceed to answer this question. All statements and explanations will be verified by late and leading higher court cases. To begin with all drivers should be supplied with a printed sheet containing information, as follows:

"TO YOU A DRIVER":

We desire to instruct you how to operate our motor vehicle carefully and particularly in view of avoiding liability to us and yourself for injuries to others.

First, you must realize that any person who negligently injures another is personally liable in damages to the injured person. This means of course that you, as a driver, are personally liable for your own negligence irrespective of liabilities of your employer. We have by legal advice obtained a set of rules for you to study, learn and follow in order to avoid your own and our liability. These rules are based upon late and leading higher court decisions and therefore the following is the correct law of "Don't."

Don't pick up strangers in your motor vehicle;

Don't deviate from the shortest most practical route to our garage or to the "trouble" or other destination;

Don't ask anyone to assist you in your work;

Don't exceed the lawful speed limit, and learn the speed laws for street intersections, main highways, secondary highways, congested districts, etc.;

Don't recklessly drive through green lights or on arterial highway, because you must use care to know that no vehicle is unlawfully or otherwise in your way. It is your legal duty to use care to avoid accidents at all places. Even if the "other fellow" breaks the law you still are liable and so are we, as your employer, if you had a "last chance" to avoid an accident and did not do so;

Don't drive at night time faster than will safely permit you to stop within the range of your headlights;

Don't neglect to "slow up" speed upon the slightest chance of injury to children;

Don't depend upon "arm signals" to protect you against collisions. Look before making a sudden turn or stop;

Don't waste time arguing with another motorist who for any reason becomes irritated;

Don't park your vehicle unless you "set" the emergency brake and, also, leave the transmission in gear;

Don't drive closer than 25 feet behind a forward vehicle;

Don't stop suddenly unless you know that a motorist in rear can and will stop in time to avert a collision;

Don't drive with a dirty windshield. Many courts have held motorists negligent and liable for collisions where normal vision was impaired by a dirty windshield;

Don't pass other vehicles on curves or hills, unless your vision ahead is positively unobstructed, otherwise you are sure to be held negligent and responsible for a collision;

Don't weave in and out of traffic, as a few minutes delay is better than a few weeks in a hospital and many thousand dollars in damage allowance;

Don't drink intoxicants or consume nerve affecting drugs;

Don't converse except by necessity with occupants of your corporation motor vehicle;

Don't willfully irritate another motorist or a pedestrian;

Don't permit any person to drive your vehicle unless by instructions from your superior;

Don't drive at night time with "dims." Many persons watch for bright headlights at intersections and dim lights have caused probably more serious accidents than any one other simple neglect;

Don't park at night time without lights, in case of motor trouble or otherwise, unless you drive clear off the highway;

Don't use our vehicle for your own purpose of pleasure without our permission;

Don't "speed up" about the time another motorist is passing you;

Don't try to outrun a street intersection yellow light;

Don't fail to keep over well to right side of street;

Don't fail to pull to curb when fire department or other emergency vehicle approaches; and

Don't fail to park close to curb.

Don't forget that you are personally liable for your own negligence. Many courts have held that any person who violates a state law, which results in injury to another, is responsible both criminally and financially. This is so because violation of a state law is considered to be gross negligence.

OTHER IMPORTANT INSTRUCTIONS

* * *

If desirable other hereinafter information may be included in this circular, since negligence in driving a gas company motor truck, or other vehicle, may result in the driver being personally liable in damages to the injured person, it is certain that if drivers are informed of these personal responsibilities the information thus imparted should induce them to exercise a high degree of care to prevent accidents.

For illustration, in a leading case, Kiffer v. Benstock, 218 N. Y. S. 535, a truck driver, who negligently collided with and injured a pedestrian, was sued for damages. The higher court held the driver personally liable in damages, and in effect said that it is elementary law that a person is liable for any damage, even though he may not be the owner of the motor vehicle the operation of which caused the damages. This court said further, *it is sufficient that the driver controls the truck* and operates it in a careless manner, to charge him with liability.

Also, in another case (217 N. Y. S. 261) it was disclosed that a driver, who negligently operated a motor-truck and injured the occupant of a passenger automobile, was sued by the injured person. The court held the negligent driver liable for $500 damages.

In many other cases the courts have rendered judgments against motor-vehicle drivers for negligently effecting injuries. In some instances their homes have been sold to satisfy and pay the judgments.

Also, see Greenberg v. Lotz Company, 146 Atl. 834, where it was disclosed that a motor-truck driver's employment ceased at noon on Saturday. Shortly before noon the driver started to take the truck to the garage. Instead of going directly to the garage he deviated and drove to his home, changed his clothes and then at 1 P.M. he re-entered the truck and, when driving carelessly and recklessly toward the garage, he negligently struck and seriously injured a pedestrian who sued the employer for damages.

In view of the fact that the injury occurred when the driver was acting in disobedience to his employer's instructions, and had deviated from the shortest route from his employer's place of business to the garage, the court held the employer not liable, stating that the employe was *solely* liable, saying:

"The rule is that for all acts done by a servant in obedience to the express orders or directions of the master, the employer is responsible; for acts which are not within these conditions the employe alone is responsible. . . ."

Another important point of law especially important to motor vehicle drivers is that a driver who kills a person while violating a state law, or while acting grossly negligent, may be convicted of the crime of manslaughter and sentenced to serve a term in the penetentiary. A recent higher court defined the term "involuntary manslaughter" as follows:

"Involuntary manslaughter is where an individual, while not intending to kill another person does so while in the performance of an unlawful act, or as a result of gross negligence."

And in still another case (151 N. E. 489) a higher court convicted a truck driver of manslaughter and said:

"It is not required that the driver to be held criminally liable, shall knowingly, intentionally, and recklessly drive. It is his duty to regard safety regulations provided by the law and also conditions existing at the place where the injury occurs."

Guilty of Murder

Many modern courts recently have held negligent drivers of motor vehicles guilty of murder. See Nichols, 103 S. W. (2d) 480, where a higher court held a truck driver guilty of murder and sentenced him to serve 10 years.

Also, a recent higher court held that a driver is grossly negligent if he operates a motor vehicle when he requires sleep. See Johnson v. Florida, 4 So. (2nd) 671, where the driver of a motor truck was convicted by a lower court of the crime of manslaughter based upon his alleged negligent operation of a motor truck on a public highway. The court record shows that this driver was driving the truck at a speed of between 40 and 50 miles per hour while he was in a state of stupor from loss of sleep. He drove the truck off the highway and killed a pedestrian. The lower court convicted him of manslaughter.

The driver appealed to the higher court which, however, upheld the manslaughter conviction and sentence of the lower court. This higher court said:

"When the accused assumed to do this he was guilty of criminal negligence and cannot escape the responsibility by averring that he fell asleep and did not realize that he had hit and killed an unfortunate human being who was entirely without fault."

On the other hand, readers should realize that modern courts require that officials exercise care in selection of drivers. Failure to use ordinary care in this respect may without doubt result in the corporation's liability.

In other words, employers are liable for injuries caused by "incompetent" employes. It is important to know that the courts have distinguished between competent and incompetent motor vehicle drivers. In one case, for example, a person whose eyesight was impaired, and who wore no eyeglasses was held incompetent, and the corporation was held liable in damages for an injury sustained by a pedestrian who was struck by the motor vehicle. Also, highly nervous persons have been held by various courts to be incompetent drivers of motor vehicles. All persons who are insane, intoxicated, under the influence of drugs, deaf, paralyzed, or naturally reckless, are deemed by the courts to be incompetent motor-truck drivers.

What Is Negligence?

In order to differentiate between negligence for which an employer is liable for injurious acts of an employe, and ordinary care which relieves the employer from liability, we shall briefly review a few higher court decisions rendered during the past few months.

Modern higher courts consistently hold that the driver of an automobile must realize that it is a dangerous instrumentality when in operation on the highway whether moving or standing. Therefore, drivers must set flares to warn other drivers of the location of a disabled vehicle at night time, or heavy damage allowances may be awarded.

For instance, in Jacksonville v. Carlile, 15 So. (2d) 443, the court records show that employes of a company started to make a delivery

The truck became disabled at night time and it was parked on the highway without flares or signals to warn the public. The driver of another automobile ran into it. He brought suit against the company and recovered a judgment for $20,000.00 in the higher court.

On the other hand, the gas company will not always be held liable under different circumstances. In other words, when the driver of an automobile collides with a parked vehicle the testimony must prove that such driver was *not* contributory negligent. Otherwise the company is not liable.

See Hogue v. Akin Truck Line, 16 So. (2d) 366, where it was shown that a truck was parked on the highway at night time and without lights, or flares. A driver of another automobile, while traveling at a speed not in excess of forty miles per hour, met a string of cars with dazzling lights. He reduced his speed to twenty miles per hour and put on the dimmer, as the law requires. When he had passed the last of the cars, there loomed before him only a few feet away the parked truck. He crashed into the truck and injured himself seriously for which he sued the owner of the truck. In holding the truck owner not liable, the higher court said:

"He (injured driver) was either driving too fast under prevailing weather conditions, or was not maintaining proper lookout."

Therefore, readers who may desire to defend a suit of this nature may be pleased to know that modern higher courts have adopted the rule of law that if visibility is impaired because of smoke, mist, dust, etc., all motorists should reduce their rate of speed to such extent and keep their automobiles under such control as to reduce to a minimum the possibility of accident from collision. When visibility ahead is greatly obscured the driver must stop his car and remain at a standstill until conditions warrent going forward. Failure to do so is contributory negligence which forfeits the driver's right to an award of damages for injuries sustained in a collision. See Arbo, 173 So. 560; Sizemore, 164 So. 648; Flotte, 18 La App. 116; Illinois, 169 La. 450; and Sexton, 130 So. 821.

An important point is that a driver who disobeys the instructions of his employer or gets outside the scope of the employment *automatically* forfeits his right to recover damages or compensation for an injury.

In Ginther v. Graham Trans Company, 33 Atl. (2) 923, it was shown that a driver temporarily permitted another person to drive the truck. The driver was killed when the truck ran into a culvert. The higher court refused to allow compensation to dependents of the truck driver, and said:

"When Ginther (driver) left the wheel and delegated its operation to another he completely abandoned his most important service to the employer and was not in the course of his employment."

Generally speaking, as above explained the driver of a motor vehicle must use at least "ordinary" care to avoid an accident, or his employer will be held liable. However, see Dupea v. Seattle, 147 Pac. (2d) 272, where the higher court held that where the driver of a motor vehicle is confronted with a sudden peril which requires instinctive action he is *not* required to the exercise of the same degree of care as when he is driving under ordinary conditions. In this case it was shown that a driver came to the top of a hill, on a narrow road, and observed a large bus 100 feet ahead of him, coming directly at him at 25 or 30 miles an hour. The bus was on the wrong side of the road for the purpose of passing an obstruction in the highway. The higher court held that the driver's action in turning the wrong direction cannot be considered negligence.

Also, see Middleton v. Public Transport, 36 Atl. (2d) 393, where a suit was brought by parents to recover damages for injuries suffered by their child when he was struck by an automobile at a street intersection. It was alleged and proved that the driver was violating a traffic regulation when the accident occurred. The jury held the company liable, and the higher court upheld the verdict. However, the court indicated that the company would not have been liable if the testimony had shown that negligence of the child contributed to the injury.

This court explained that altnough a driver is violating a traffic regulation when an accident happens, the company is not liable if the testimony proves that the injured person *also* was negligent.

THE STACEY MANUFACTURING CO.
Engineers Fabricators Constructors
• Gas Holders • Gas Plant Equipment • Steel Plate Construction •
GAS HOLDER INSPECTION SERVICE
Cincinnati — Ohio
93 STACEY SINCE 1851 Years

SUPERIOR GAS METERS
For Sound Values and Continuous Operating Economy
Meters for Domestic and Industrial Use. All Sizes 5B to 60C.
Wet Test and Demonstration Meters — Diaphragms —
Service Cleaners — Provers — Meter Repairs
Write for details and quotations
SUPERIOR METER COMPANY, INC.
167 41st Street Brooklyn, N. Y.

To Sell More Gas

By

J. E. Bullard

TO A greater and greater degree postwar planners are giving serious attention to selling. If, as some of them believe, four times the prewar volume of civilian goods must be produced to provide jobs for everybody, able and willing to work, it follows four times as much selling must be done. This does not mean, these planners point out, that there must be four times as much advertising or four times as many salesmen but rather more major league salesmanship and less minor league.

There are striking resemblances between baseball teams and sales department. That team which wins pennants consistently is the one which has the best players and the best management. That sales department which has the best salesmen and the best management makes the most sales per individual in the department. The best baseball manager cannot win pennants in the major leagues if his players are of minor league caliber. The best sales manager cannot get the best results, possibly not even reasonably satisfactory results, with mediocre salesmen. Also, the best aggregation of ball players fail to win pennants under poor management and the best salesmen fall down if directed by mediocre sales management.

To win pennants consistently the best ball players have to be directed by a manager able to get the most out of each player and also to bring about the utmost in team work. Exactly the same is true in the case of a sales department. Unless the manager is able to get the most out of each salesman and inspire a spirit of team work which presents a solid and united front to all competition, sales volume does not reach the maximum of which the salesmen are capable.

There is another resemblance between the two which is of greater importance than has been realized to any great degree in the past. Minor league ball players are ambitious to to get into the big leagues. One of the controlling incentives is the increase in salary which can be expected after major league qualifications are demonstrated. The minor league salesman also wants to make the big league. Too often, however, he has failed to find major league selling in the utility industry. As a matter of fact, there is a rather surprising dearth of really major league salesmanship in most industries.

This is due in no small part to limiting the earnings of the salesmen. When a man does sales work for ten years in the utility business, finally becomes a sales manager, and then discovers he can start in an entirely different kind of work, in which he has had no previous practical experience, at a salary one hundred dollars a year more than he ever earned in the utility industry, he is inclined to believe he made a serious mistake when he first went to work for gas and electric companies. The fact of the matter is that minor league remuneration tends to attract minor league salesmen and any men who possess major league capabilities soon leave the industry for jobs in major league sales departments. This results in no more chance of a gas company holding the best salesmen in a minor league sales department than a minor league baseball team has of holding real major league material.

Encouraging every employe, regardless of what the department in which he works, to earn all he is capable of earning and then paying him all he earns, has been demonstrated to be profitable to the employer and the employee. Henry Ford began making more money than before directly after he instituted his five dollar a day minimum. The important reason for this increase in net profit was reduction in labor turnover.

The Lincoln Electric Company has published charts which show the results of utilizing incentives intelligently and removing the ceiling from employe earnings. Those charts show the selling price of a 200 ampere welding machine has been reduced from about $1,500 in 1917 to $200 in 1943. They show the average annual wages have more than doubled since 1929. In fact, they more than doubled between 1933 and 1937, a period when business conditions certainly were not booming. Sales volume was some eleven times more in 1937 than in 1932 and dividends per share of stock in 1937 were three times those of 1930 which was a year showing a considerable increase over previous dividend payments. Reports of this company shows everybody has benefited. Employes earn more, stockholders get better dividends, customers pay less for the products the company makes and sells.

Before the last war, a dealer in office appliances and supplies, changed his basis of paying salesmen and removed the ceiling on what he was willing to pay them. The reason, he explained, that many firms believe they must limit the earnings of their salesmen is due to the fact that they are not quite certain they are paying them on a basis which results in more profit to the company as the salesman earns more. After he had changed the basis of payment from a percentage of the selling price to a percentage of the gross margin, he was convinced the more his salesmen sold the more profit he made. The system he adopted worked so well that turnover of his salesmen was reduced to practically nothing. Those who left their jobs to enter the services all returned to them after the war was over. His sales volume went up and he stated that as nearly as he could discover his selling coasts went down to below those of any of his competitors.

Unless there is certainty, each salesman is earning every cent he is paid and that the more he sells, the more the company benefits, there is certain to be a tendency to limit his earnings and in that way his total volume of sales. A case in point is that of a gas company which was paying salesmen on a commission basis. One month, due to a little special incentive, a salesman earned considerably more in commissions than the sales manager received in salary. Officers of the company thought it was too much to pay a salesman for a month's work. Yet, the records showed the business this man brought in was better than that of most of the other salesmen. There was discussion about withholding some of the commission until it was pointed out it had been earned on a basis established by the company.

This particular salesman showed real major league possibilities and, had he been encouraged to keep up the record he made that month, there is reason to believe he could have maintained a volume some three times that of the average of the other men in the department. Instead of being encouraged, however, he was discouraged and he never made as good a record again.

This attitude of mind, of course, is

not confined to the gas industry. It can be found in many other. At one time, however, it seemed to be rather universal in the utility business. At least a lot of the best salesmen had the impression it was and for that reason avoided working more than temporarily for any gas company.

If the fear of paying salesmen or the sales manager too much is to be overcome it is necessary for the gas company to decide, once and for all what it is selling, then determining a sound basis upon which to base what is paid the salesmen. Obviously, the company is selling gas. If it is selling gas, it follows that the salesman should be paid on the increase in gas sales and on no other basis. This method of determining remuneration could take the form of some percentage of the profit from the increase in sales. Regardless of whether the men are paid on a straight salary basis, a straight commission or a combination of the two with special bonuses for outstanding results, the basis for figuring remuneration of each salesman may well be the profit on the increased gas sales due to his efforts.

Such a basis, of course, leaves out of account credit for selling appliances. There are two good reasons why a utility, whether gas or electric, should turn the sale of appliances over to the dealers. Perhaps the most important one is that only when a manufacturer has complete national distribution will he do the maximum amount of national advertising. National advertising leads to wide public acceptance and makes local selling much easier. No gas company, however, can sell effectively all the appliances manufactured by all the manufacturers. Only dealer distribution can result in complete national distribution for all manufacturers. This is a fact so obvious it requires no proof.

When a gas company turns all appliance sales over to dealers, however, it is likely to find results extremely disappointing unless facts concerning the dealers are given due consideration before hand. They have to be sold on the idea of handling appliances and pushing their sales. This cannot be done unless the dealer can be convinced he will make more money selling gas appliances than he will selling competing ones. Some method must be worked out in advance which makes it certain the dealer can make more money with a given capital investment if he becomes enthusiastic in selling gas appliances. This work among the dealers is likely to require major league salesmanship. It may be necessary to do a good deal or actual selling for the

Who did it... FIRST?

By Betty Blackmarr

Q. Who took the stooping out of broiling?

A. Estate did it—way back in 1935—with the first waist-high broiler on a table-top range. It made broiling as easy as frying. A later Estate "first": the famous Bar-B-Kewer which made it possible to broil whole hams, chickens, rib roasts.

Q. Who proved that "even four needn't be a crowd" in baking pies and cakes?

A. Again—Estate. With the ingenious invention —the Air-Flow Oven. This superior oven actually enabled women to bake 4 pies, 4 cake layers, 8 loaves of bread or 56 biscuits at one time . . . all an even, tempting golden brown. And *without* shifting a pan.

Q. Who built the first "grill room" on the range top?

A. The Estate Grid-All was the first griddle plate built into the top of a modern range for the home . . . the handiest thing imaginable for grilling hamburgers, bacon, flapjacks.

Q. What's the most logical range for women to buy after the war?

A. The range which, through the years, has always been years ahead in the features that made kitchen hours pleasanter and fewer—the Estate.

FIRST WITH THE FINEST FOR OVER 100 YEARS

ESTATE

Heatrola

RANGES & Water Heaters

Made only by THE ESTATE STOVE COMPANY, Hamilton, Ohio

dealers and also to find and train salesmen they will need. In some instances a gas company salesman can be loaned to a dealer. Even some of the company salesmen could be encouraged to go into the appliance business themselves. One point, however, has to be observed. There should be no discrimination between manufacturers of gas appliances on the part of the gas company as it cooperates with the dealers in making sales.

If it is agreed, the gas company is interested only in the sale of gas and that all appliance sales should be made by or through dealers, the question arises in regard to what the gas company salesmen will sell. Of course, the answer is gas. The goal is to increase the gas consumption of every consumer. Salesmen will have to go from house to house in the case of domestic consumers to do this. They will have to sell the idea that burning more gas will make the home a better place in which to live. In this manner a surprising increase in gas sales can be brought about. The salesman who is not required to sell any particular appliance is more likely to accomplish most in this direction than is the one who is giving his main attenton to selling of one type of appliance.

Industrial gas, of course, has to be sold on the basis of improving the quality, speeding up and lowering the cost of production. This is primarily an engineering job. In some cases it may require a laboratory for testing out ideas and designs. It most certainly calls for thoroughly competent, trained and experienced sales engineers. Such men cannot be obtained unless they are paid adequately for their services. Comparatively little electricity for power or heat has been sold on a cost of current basis. It has been sold on a quality and cost of production basis.

Whether the coming decade results in a marked growth of the gas industry, a remarkable increase in the sale of gas, depends largely upon whether gas companies do major league selling or remain in the minors. There is nothing to fear and everything to hope for if every gas company organizes and continues a major league sales department to sell gas.

Tests to Determine Candidates' Selling Ability on Gas House Heating

PUBLIC UTILITIES throughout the country are cooperating in a series of psychological experiments designed to provide an accurate basis for selection of postwar salesmen.

Data collected in 15 cities through the summer by staff members of the Personnel Research Institute of Western Reserve University of Cleveland will be used in preparing a series of tests to predetermine whether job candidates can sell gas heating equipment for home use. Dr. Jay L. Otis, director of the Institute, is in charge of the project. The research is being underwritten by the Bryant Heater Company of Cleveland, Lyle C. Harvey, President.

When the results of hundreds of interviews with men of known sales records, containing nearly one hundred thousand answers to questions and problems, have been collated, a standard test for gas heating salesmen will be prepared and put at the disposal of the utilities as well as Bryant distributors.

"Use of aptitude tests to determine mechanical ability has had remarkable success in war industries," Mr. Harvey said, "and preliminary studies undertaken by Dr. Otis indicate that the same fundamental principles can be applied to selection of salesmen.

"Many modifications will obviously have to be made, for though you can detect hidden mechanical skills by the way a man uses his hands, the special skill a salesman needs is not so easy to get at.

"While Dr. Otis and others have previously employed some general sales aptitude tests, we believe this is the first attempt on a national scale to predetermine ability to sell a specific line of goods, in this case gas heating equipment.

"Dresser Industries, of which The Bryant Heater Company is a member, has a policy of seeking and encouraging talent in its own organizations and this step is merely a phase of our interest in the future, particularly in the placement of returning service men in jobs for which they are best fitted."

Dr. Otis described the tests being used in the experimental work as the generalized technique already familiar to psychologists, modified for a specific field.

"Not every salesman, even every good salesman, can sell gas heating equipment," he explained, "but individuals already have been discovered who are likely to make a success in this field though they never have been salesmen. An auditor, for example, who took the tests, had an extremely high score. He said it had never occurred to him that he could sell, but after the war he'll change his job, with every sign pointing to a new, successful and better paid career.

"Large numbers of salesmen will be essential to move the household goods American industry is capable of producing after the war. Good salesmen, those whose natural bent and inclination fit them for this particular field, might be overlooked and others whose real talents lie elsewhere might get the jobs and be doomed to failure if no forethought were given to the problem.

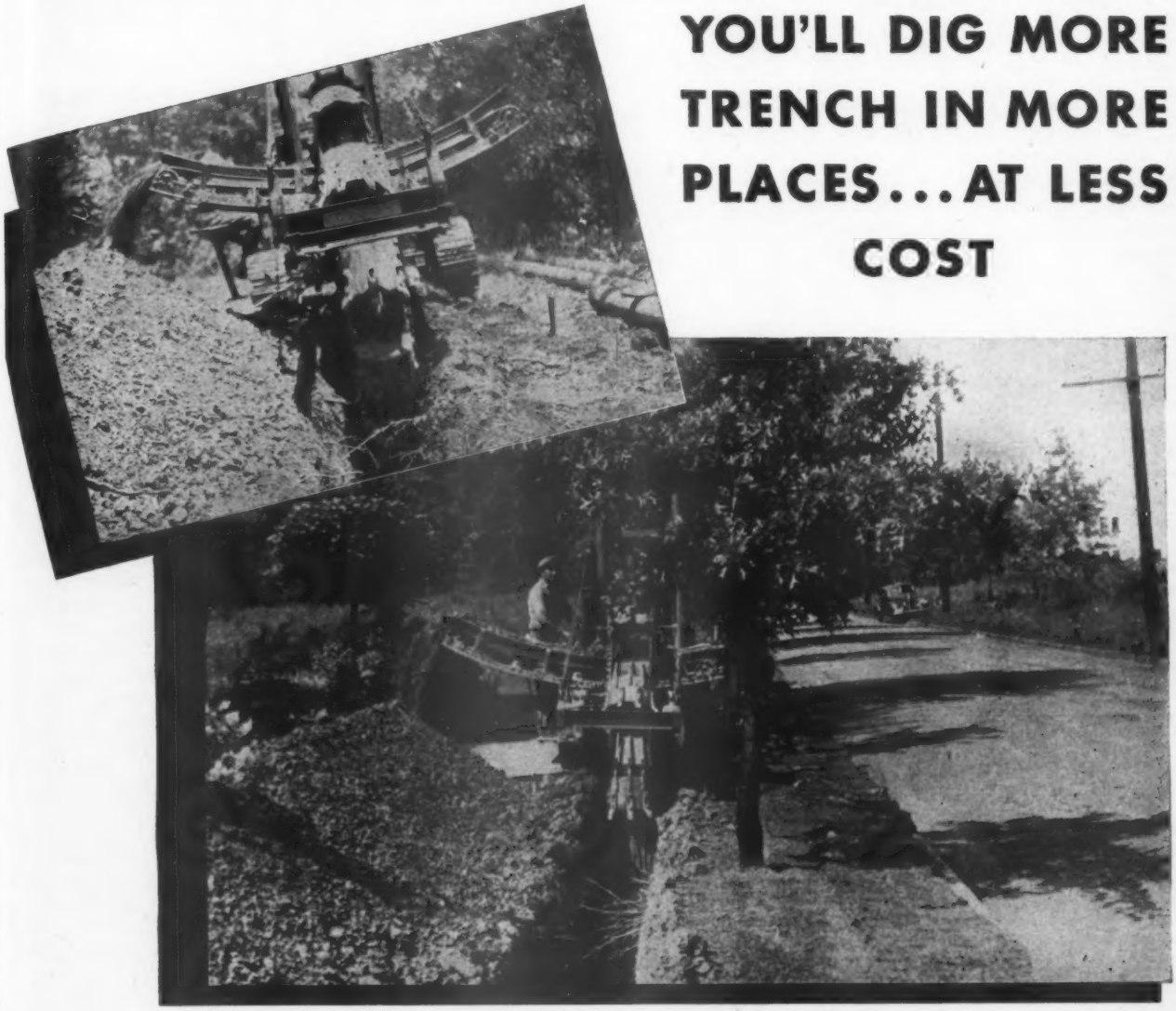
"The eager cooperation given by the utilities to Dr. Otis and his staff in the collection of data indicate how strong is their interest in rebuilding high caliber sales staffs the minute they have equipment to sell. We believe our psychological studies will be of primary benefit to the gas industry as a whole, as well as to the general public which will be given the benefit of expert sales service by the utilities and distributors.

"In contrast, a door-to-door necktie salesman rated high on general tests but not on the special aptitudes for selling fairly large items of a mechanical nature such as a gas furnace. He is the type who needs the stimulus given by continuous small successes.

"We are not going after the petty attributes of salesmanship in this comprehensive series of studies, but the fundamentals. Men who find selling uncongenial are readily weeded out by the tests. Others, who possess the attributes of daring and self-confidence which selling demands, quickly demonstrate those qualities in their answers. A man for example, who buys an expensive car on a small drawing account indicates more faith in himself than a man who puts off buying the car until he is sure of a bigger income. While it is too early to determine the exact form of the final tests which will be supplied to all gas companies, results thus far indicate that we are proceeding in the right direction."

With "CLEVELANDS" ON YOUR POSTWAR DISTRIBUTION JOBS

YOU'LL DIG MORE TRENCH IN MORE PLACES... AT LESS COST



CLEVELANDS are outstanding in their ability to get in and dig wherever pipe has to be laid, getting the job done with maximum speed and at lowest cost.

Whether the job is a short distribution trench in the confined areas of city or suburb or a long main line across country, over difficult terrain and through all kinds of soil, "CLEVELANDS" assure you most completed trench footage and most actual working hours per shift.

Among the reasons why "CLEVELANDS" deliver this standout performance are:—correct, compact, wheel-type, full-crawler design . . . superior construction, modern engineering and mechanical excellence . . a multiplicity of digging and traction speed combinations always available to the operator . . . maximum maneuverability and ease of operation . . . quick-reversible arc conveyor . . . ample power.

See your nearest CLEVELAND Distributor or write direct for complete details.

THE CLEVELAND TRENCHER COMPANY

20100 ST. CLAIR AVE. *"Pioneer of the Small Trencher"* CLEVELAND 17, OHIO

"CLEVELANDS" Save More . . . Because they Do More

War Production Board and Other Administrative Orders

Order L-23-c Amended

Order L-23-c, covering the production of domestic cooking appliances and domestic heating stoves was amended August 29th, by eliminating the restrictions which limited the number of models and types of domestic cooking and heating stoves formerly allowed for production, under Schedule B in the original Order.

The Order further specifies that no thermostats for use with stoves shall be produced. Provisions are made in the new Order under which persons desiring to manufacture more stoves than they have originally been authorized to produce and persons desiring permission to manufacture accessories or thermostats, to apply for such production authorization under Priorities Regulation 25. Accessories made under this regulation may be assembled or incorporated into stoves. An amendment of September 16 permits separate broilers in combination ranges only.

Range Rationing Order 9-A Amended

The OPA on September 7th, announced that effective October 15th, coal and wood heating and cooking stoves will be sold on a non-rationing basis. Oil and gas stoves, however, will remain rationed.

It was pointed out that current inventories of coal and wood heating and cooking stoves are substantially larger than they were when nationwide rationing started a year ago in August, whereas supplies of oil and gas stoves—and their fuels—are not sufficient to permit unrestricted sales. Current inventories of the coal and wood stoves, plus anticipated production, are expected to be able to keep up with unrationed demand after October 15th.

Order L-85 Amended

Order L-85 covering the production of all types of water heaters including gas, was amended on August 29th by eliminating previous restrictions on the sources of material used in the production of water heater metal jackets.

In the original order manufacturers were prohibited from fabricating metal jackets except from materials in inventory, materials obtained from frozen, idle and excess inventories, or as specifically authorized by WPB.

Thus, the amendment will permit manufacturers to obtain needed materials from any available source, resulting in the substantial increase in the production of water heater tanks.

Control Valves and Regulators

Consolidation of Schedules I and V of Order L-272, which respectively provide for standardization of control valves and regulators, was recommended by the Automatic Regulating Valve Industry Advisory Committee at its first meeting recently, the War Production Board reported August 23.

With the separate schedules merged, the standardization provision would apply equally to both products and thereby provide for uniformity, committee members said.

The new committee succeeds the former Regulator, Control Valves and Liquid Level Controllers Industry Advisory Committee. This committee was reorganized to obtain greater industry representation and to confine its work exclusively to the automatic regulating valve industry.

Office of Price Administration representatives notified the committee that price relief may be obtained in individual cases if application is made. They said that OPA will consider the total profit status and previous earnings on a specific production when price relief is sought on that particular item.

OPA representatives urged that OPA be contacted as far in advance as possible concerning any probable price revisions because it is unreasonable to expect immediate action in view of the many factors that must be considered.

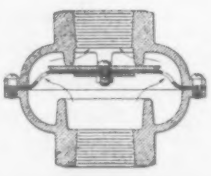
Revision of Tin Order M-43

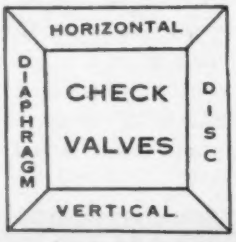
Permission to use solder having up to a 50 per cent tin content by weight has been granted for three additional purposes, the War Production Board reported August 23. Previously, solder with this percentage of tin was permitted only for ammunition boxes.

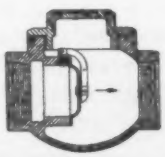
Revision of Tin Order M-43 permits this weight to be used for the manufacture, repair and maintenance of (1) refrigeration equipment; (2) radio and radar equipment and (3) for the manufacture and repair of any type of indicating, recording, measuring or controlling instruments and their associate control valves, excluding manufacture and repair of gas meters. Solder containing 35 per cent tin is permitted for manufacture, and 38 per cent for repair of gas meters, officials explained. The action with respect to radio and radar equipment restores to that industry the right to use 50 per cent tin content solder. The industry has been using a 35 per cent tin content solder which slowed down production, officials said.

The amendment also clarifies the provision calling for certification from distributors of solders and babbitt metal. The distributor must now certify to the manufacturer that he will not re-sell to any user unless he has received the certificate from the user as required by the order, officials added.

Pressure Controls for Gas and Air







NORWALK VALVE COMPANY

85 Spring St. South Norwalk, Conn.

1944 Post War Committee Reports
On Committee Developments

By
A. M. Beebe
Chairman Post-War Planning Committee
of American Gas Association

AS A result of two years of study our Committee has now reached a position where definite thinking has crystallized.

The Industry has already received copies of our various basic studies, as follows:

(a) Report #1—"Post War Purchasing Power & Potential Markets." September 1943.
(b) Report #2—"Competitive Factors Affecting Realization of Potential Markets." December 1943.
(c) Interim Report March 1944—"Post War Purchasing Power & Potential Markets."
(d) Report #3—"Recommendations to the Gas Industry." April 1944.
(e) Report #4—"Engineering & Economic Aspects of Our Own Ability to Achieve Markets." (Economics of Mfg. Gas Sales) April 1944.
(f) Report #5—"Results of Survey of Post War Appliance Needs."

Studies that are under way and that will be released to the Industry as soon as they are completed are as follows:

(a) Economics of the House Heating Load.
(b) Studies Relating to the Development of Production & Distribution Economics to meet Post War Conditions.
(c) Development of a Research Program to satisfy the Post War Conditions.
(d) Economics of Natural Gas Sales.
(e) Reports on Other Related Studies.

As a result of all the previously outlined studies, certain developments have taken place which should be here recorded and emphasized, since they are most important, and the significance should be appreciated by the industry, as follows:

(a) Objective of our Coordinated Kitchen Program.

Our industry does not need to be again told of the importance of our Domestic Gas Load. It does not need to be told how formidable the competitive threat to that load is and the reasons for it, which have been previously described in detail in Report #2. As a result, one of the first programs recommended by our Committee and adopted by the Association was the "Coordinated Kitchen Program" with which everyone is assumed to be familiar. The wave of acceptance of this program has been most heartening and our thanks are due Mr. C. V. Sorenson and his Company (Northern Indiana Public Service Company) for allowing him to spend so much time in piloting this activity until a permanent Director could be found. Here again we have been fortunate in securing the services of Mr. Vinton Potter who, together with Mr. Sorenson's most excellent preliminary direction, assures success of this important activity. These two men have demonstrated splendid ability to handle this program.

(b) Reasons Why Emphasis Must Be On The Gas Range and Kitchen Ventilation While Supporting Other Loads.

At first it may appear that our Post War Planning Committee thinking and our Coordinated Kitchen Program give too much emphasis to the range and not enough to other desirable services using gas. Therefore, perhaps a few reasons for our program will help clarify the situation.

1. All our Post War Surveys show that an alarming percentage of our existing customers would buy an electric range the next time they were to purchase a range. This impression has not been born of experience but by what they have been led to believe. Surveys show that this preference is because they believe the electric kitchen to be cleaner and cooler. Surveys conducted among those who have used both fuels do not show such a high acceptance of fuels other than gas. Apparently the recognized superiority of cooking performance and economy of a gas range outweigh the imagined benefits of cleanliness and coolness when backed by practical experience.

2. Surveys show also that a tremendous amount of home construction is going to take place in the immediate post war period. Unless we raise a question mark in the mind of the American housewife on the superiority of electric cookery as to cleanliness and coolness, we may wake up and find a "fashion" started in post war construction that will be most difficult to back up and counteract.

3. Studies show that the soil in kitchens is not from the fuel but from the oils and fats distilled from the food in the cooking operation. High temperature cooking and faster rates of cooking accelerate these problems, while low temperatures and slower cooking reduce them. Because gas has larger quantities of heat available, and is a cheap form of fuel, there has been a tendency for our customers to use high temperatures to gain speed. At normal room temperatures oils and fatty vapors distilled from the food do not remain in the vapor state. Kitchen walls are relatively cold to the vapors which condense on them, acting as a collector of lint and grime and accounting for the soil in the kitchen. The apparent cleanliness of the electric range is not the fuel but the type of cooking the customer has been forced to adopt. Low temperatures and slow rates of cooking can be done with gas as well as with electricity, but even here, in the modern home of tomorrow (small, compact and insulated) if absolute cleanliness is to prevail, kitchen ventilation of these oils and odors is important, irrespective of the fuel used. Here the gas range has a distinct advantage, since the warm products of combustion caught at the source along with the cooking oils and greases, can become

the vehicle for their elimination without condensation. With fuels other than gas, the condensation of these fats and oils under many conditions might create undesirable deposits in a ventilating system. Furthermore, catching these odors at the source, which with a gas range is easy, involves a minimum of warm air discharged from the house, which is necessary to consider if economical home heating is to result, since all warm air discharged, means cold air drawn in from somewhere else. Thus we are best able to render a kitchen that is cleaner and cooler. This is important since we must not be on the defensive in the kitchen. While it is admitted that a gas range excels in economy and performance, if installed properly, it can also excel in providing a *clean, cool, odorless kitchen.*

4. Using, Or Eliminating Heat, As Desired by the Customer.

Occupants of the modern home of tomorrow would like to enjoy the benefits of automatic househeating with gas.

During all cooking operations heat and water vapor are given off from the food, irrespective of the fuel used. Furthermore, a large proportion of the products of combustion of gas consists of water vapor, as well as heat, which may or may not be desired in the home, depending on the time of year. During cold weather these vapors, when not contaminated with objectionable odors and greases, are usually desirable in the kitchen because they help to heat and humidify the home. During warm months, and especially in the canning season, they are decidedly not wanted in the kitchen or any other place and the desirability of eliminating them by kitchen control is obvious. When we analyze the cooking and baking processes in detail, the importance of this control to kitchen cleanliness is apparent.

In order to make gas househeating more economical there are times, especially in cooler months when it may be desirable to have the heat used in cooking perform the extra service of heating and humidifying the air in the home. Such a method can be frequently utilized, since there are many cooking operations that do not produce objectionable vapors, such as baking potatoes, boiling eggs, baking cakes, etc. In these cases only heat and water vapor are given off.

Calculations show that the presence of a gas range in the kitchen rather than other means of automatic cooking will result in substantial economies that will help the customer achieve the comfort and convenience of automatic gas heating. These economies of the gas range include not only the double use of heat as outlined above, but, due to the low cost of gas for cooking and the fact that the gas range uses up the first steps of the block gas rate, customers who heat their homes with gas are enabled to fully enjoy the lower rate classification for extended use of gas. Thus "Something new has been added" as to why a gas range should be included in the modern post-war home.

Here again gas can perform a superior service which is under the control of the customer by a simple flick of the finger, which discharges the products into the kitchen when wanted, or into a concealed flue when cooking odors are involved or when heat is not wanted.

5. Research and developments (some of which are of a startling nature) on the problems of proper kitchen ventilation are already under way. It may take some time before final details are worked out. However, in the meantime there has been developed a means of kitchen ventilation that is capable of adaptation to present range models—using existing available materials—that does not involve other facilities in the kitchen and which is also adaptable to modernization of old kitchens as well as to new construction. This development will accomplish substantially all of the objectives of a kitchen ventilation program. While it is true that later research and development may improve on it, it does mean that such service can be available in the immediate post-war period, so that we can begin to talk about it.

6. Our coordinated kitchen program which brings in with it allied manufacturers gives us a vehicle for strengthening and broadening our sales outlets and advertising power. In addition, the abiilty of appliances to fit one with the other should enable us to meet all the advantages that competing fuels may claim. Thus we are in a position to offer a service to our customers that is unexcelled by any other fuel, and we can become aggressive rather than defensive in the kitchen. The tying together of disposal units, dish washers, and other electrical appliances in our program requires copious amounts of hot water which we are in a position to best provide.

7. While our program has been directed at the range, it must be remembered that this is the focal point of attack. Both gas and electric rate structures are such that once having secured the range, other services can be more economically considered. Our thinking in support of the range is so as to assure the other services of water heating, refrigeration and househeating being "grooved" for gas. Therefore, while our program may appear to emphasize the range, it is the combined picture on which we are working.

8. Therefore, we feel it is important that the National Advertising be geared in the direction of raising a question in the mind of the American housewife who feels that other fuels may be able to give her a cleaner, cooler kitchen, and to begin to tell the story of our ability to provide a kitchen which is "Cooler in Summer —Heat Saving in Winter and Cleaner the Year Round" or in a word—"THE COMFORT-CONDITIONED GAS KITCHEN."

(c) Recommendations on Sales Policies.

The need of increasing contacts and sales outlets to the customer, as well as developing sales allies to meet the competitive sales program of competing fuels has been emphasized in all our studies and is again stressed in the A.G.A.E.M. Post War Report (Appendix "D"). To aid in this direction a program of Sales Policies has been developed by the Residential Section and is warmly endorsed by the Post War Committee. These recommendations will soon be released and it is urged that they be given most careful study by the industry.

(d) Cooperation on Research with Coal Industry.

As a result of our thinking that the manufactured gas industry is the best means for conveying the energy in coal to the customer in ashless and convenient form, we are glad to report that real progress has started and that we should be in a position soon to report definite progress that should materially strengthen the programs of these two powerful industries.

Conclusion

The above recitation of study and progress is most heartening and should assure our industry of successfully meeting competitive conditions in the post war period and developing healthy and continuous progress in extending our service to society and thus play our part in raising the standard of living of our customers in the post war period, through our ability to render superior as well as the most economical service.

Present Status of Coordinated Kitchen Program

By

C. V. Sorensen and H. Vinton Potter

The Coordinated Gas Kitchen Program which is being developed by the Gas Industry does not represent an entirely new idea. Individual gas companies have been promoting gas kitchens and kitchen planning for a number of years, but it is usually the case that movements of this type gather momentum slowly. The acceleration of the movement through the present promotion is the result of the studies made by the Post-War Planning Committee of the American Gas Association. These studies covered, among other things, a measurement of markets and purchasing power after the war, an analysis of probable competitive conditions and the ability of the Gas Industry to retain and expand its market in the face of all other competition for a share of the consumer's dollar. It was quite evident that social and economic changes, accelerated by the war, would require viewing the future marketing of gas service in a different light than merely the sale of so many cubic feet of gas to a given number of customers each month. Gas service in the future will have to play a specific part in the task of operating the American home. Changes in the domestic help problem and high taxes and living costs will necessitate careful budgeting of both time and spendable income. An appreciation of the necessity for food conservation and the nutrition value of properly prepared foods will place added importance on the task performed by gas in the preparation and preservation of foods. The general maintenance of health and sanitation through hot water service becomes a task for gas served. More compact and better insulated homes will bring automatic gas heat within the reach of a much larger group of customers. Year-round gas air conditioning will find its place in a continually expanding market. Finally, cleanliness and freedom from cooking odors and greasy cooking vapors will be a "must" irrespective of the fuel used because of the limited amount of the housewife's time that will be available for cleaning duties. All of these facts pointed directly to the kitchen as a focal point for gas service in the home, and indicated that the manufacture of gas appliances, kitchen cabinets, lighting equipment, floor coverings, etc., were also jointly involved in this market.

Preliminary interviews with gas appliance manufacturing executives indicated their willingness to participate in a cooperative movement. A number of leading kitchen cabinet manufacturers welcomed a similar opportunity. Visits with gas company executives revealed their appreciation of the potential market and their willingness to spend money and manpower in its development in their local areas.

With assurance of support for a cooperative movement of this type, steps were taken to work out an orderly plan of approach to the problem. The Executive Board of the American Gas Association approved the general idea and pledged the necessary support. Similar action was taken by appliance manufacturers through their national organization (A.G.A.E.M.).

Meetings were arranged at the American Gas Association Laboratories at Cleveland at which time representatives of the manufacturers of cabinets, gas appliances and the Gas Industry reviewed applicable research work already done at the laboratory and after a very thorough discussion, arrived at an agreement as to the problems that would have to be met. One of these was air changes or ventilation in the kitchen. This problem was stated as not being one of venting an appliance, but rather the removal of objectionable cooking odors and greasy cooking vapors in a more efficient manner than had been previously accomplished. Several manufacturers, in addition to the laboratory, are now working on this problem and it is expected that a number of practical methods will soon be available. As a matter of fact, the Rochester Gas and Electric Corporation of Rochester, New York recognized this problem several years ago and has finally developed what seems to be a very satisfactory method of removing cooking odors and greasy cooking vapors before they have an opportunity to circulate throughout any part of the house. Initial equipment, which has been subjected to field tests of more than two years, has performed satisfactorily and a demonstration home, built on the sales floor of that company in Rochester, is now used to demonstrate to the Building Industry and public the success of this idea.

The next logical step was the selection of an individual to devote full time to the Coordinated Gas Kitchen promotion who had a background of adequate experience in the Gas Industry and who could command the confidence of both gas company and manufacturing executives.

Mr. H. Vinton Potter agreed to accept this assignment and is now busily engaged in making plans and putting them into effect. Mr. Potter is highly regarded throughout the Gas Industry, has a broad background of experience and was considered an excellent choice by all who were familiar with his previous record. The energy and speed with which he got into action on this new assignment is indicative of the progress that may be expected.

Electric Competitive Situation

By

R. E. Ginna

Chairman, Electric Competiiton
Post-War Planning Committee

The press and the trade papers of the nation are full of the reports of of this and that post-war planning group—all pointed to the possible business, economic and social levels of post-war America. This is a desirable and healthy sign and promises much for our welfare, even though many of the plans are obviously conflicting, fundamentally unsound because of far-fetched premises, and too conjectural. One hesitates, therefore, to expose the weakness in the plans of any group for fear of being misunderstood, and having the intention to be helpful misconstrued as a destructive or competitive act. But this is an age of facts and figures and if post-war plans are to be successfully carried out, they must be objectively based

on proven performances of the past and adjusted for the future on the basis of tested theories of research and application.

With such an introduction and apology we now direct ourselves to the post-war plans of the gas and electric utilities to increase their domestic loads. On all sides one hears and reads the claim of the electric industry that it will at least double its domestic consumption per customer in the first five post-war years. This is an impressive statement, and it has been picked up and repeated so many times in the press that it is now being accepted as a definite post-war objective for the electric utility industry capable of being accomplished and no one would welcome its realization more than myself! The hope is generally accompanied by the explanation that the recessions in industrial war loads with coming of the Peace will leave available large surplus generating capacity to take care of the demands imposed by new electric ranges and water heaters, and market estimates (rather than surveys) show a tremendous accumulated consumer demand for such major domestic appliances. That these complimentary factors will probably exist no one can deny. The trouble with the claim is that it does not take into account actual characteristics of the present annual domestic use per customer and the volume of major appliance sales necessary within 5 years to effect a 100% increase in the present average annual use. Before resorting to statistical sleight-of-hand, it should be borne in mind that it is admitted there may be isolated areas where such an increase in domestic electric use may be obtained. But the exception does not prove the rule! This article attempts to consider the electric industry as a whole.

During the Year 1943, the average domestic use per customer including rural sales for each geographic division of the nation was as follows:

TABLE #1*

Domestic Customers and Sales including Rural Year 1943

Georgraphic Division	Customers	Kwh. Sales	Av. Use
New England	2,220,502	2,033,032,000	916
Middle Atlantic	6,859,987	6,252,025,000	911
South Atlantic	2,774,384	3,255,591,000	1,173
East North Central	6,657,177	7,648,474,000	1,149
East South Central	1,259,228	1,608,432,000	1,277
West North Central	2,581,343	2,670,143,000	1,034
West South Central	1,805,334	1,639,486,000	908
Mountain	818,858	1,124,736,000	1,374
Pacific	2,984,524	5,385,582,000	1,805
Totals	27,961,337	31,617,501,000	1,131

* *Source—Edison Electric Institute.*

Based on a recent survey, conducted by the Electric Light and Power magazine, asking the electric utilities how many ranges, water heaters and refrigerators they expected to sell in the Year V+1 (first post-war year), and after projecting the estimates of the reporting companies so as to attempt to cover all companies in the country, I arrive at the following results:

TABLE #2

Estimate of Year V+1 Sales

Geographic Division	Ranges	Refrigerators	Water htrs.	Total Units
New England	40,104	125,000	9,271	174,375
Middle Atlantic	66,284	261,111	15,756	343,151
South Atlantic	55,190	165,388	24,526	245,104
East North Central	114,709	283,040	45,855	443,604
East South Central	31,711	69,470	18,606	119,787
West North Central	42,972	179,499	22,717	245,188
West South Central	20,788	165,644	10,529	196,961
Mountain	16,016	39,403	10,798	66,217
Pacific	84,734	279,307	57,740	421,781
Totals	472,508	1,567,862	215,798	2,256,168
% of Total Units	20.9%	69.5%	9.6%	100.0%

By using an estimated annual kwh. usage of 1,500 for a range; 3,000 for a water heater and 420 for a new refrigerator applied to the above V+1 Sales, we arrive at the effect of such anticipated merchandise sales on the present average use per customer after the first year.

TABLE #3

Estimated Average Kwh. Use Per Customer—Year V+1

New England	979
Middle Atlantic	949
South Atlantic	1,255
East North Central	1,213
East South Central	1,383
West North Central	1,115
West South Central	981
Mountain	1,463
Pacific	1,944
Total (U. S.)	1,203

The above table demonstrates that the estimated Year+1 sales of ranges, water heaters and refrigerators would increase the national average domestic electric use from 1,131 Kwh. to only 1,203 Kwh. Since we are essentially concerned in determining how much of an effort is needed to double the present "use," one can readily compute that *it would take nearly 16 years even at the yearly rate of the estimated V+1 annual sales volume of the three major appliances.*

To put it another way, the present national total sales to domestic electric customers, including rural business, amounts to approximately 31,617,501,000 Kwh. annually. At the ratio of predicted V+1 sales, (namely, 21% of the units to be ranges; 69% refrigerators, and 10% water heaters) it would require the following added appliances to produce an annual consumption equal to the present load.

Please note that the above relationship still holds to the reasonable V+1 year estimates that for every 100 refrigerators, 30 ranges and 14 water heaters would be sold. Yes, the relationship holds but are the number of each appliances on the beam? I know I have rounded corners and jumped over the moon, but who hasn't? The point is that most anything can be proven statistically but not everything can be statistically proven. Yes, I know that if statisticians were laid end to end it would be a good thing!!

TABLE #4

Estimated Annual Appliance Sales to Equal Present Kwh. Annual Use

24,615,433 Refrigerators	@	420 Kwh.	=	11,128,000,000
7,418,376 Ranges	@	1,500 "	=	10,338,000,000
3,388,029 Water Heaters	@	3,000 "	=	10,164,000,000
Total Domestic Sales				31,630,000,000

Let's look at it another way. How many "all electric packages" (range, water-heater and refrigerator) must be added in 5 years to double the present total domestic electric annual sales in Kwh.? Still assuming the annual Kwh. values at 1,500 for the range, 3,000 for the water heater, and 420 for the refrigerator, the answer is 1,285,000 "packages" each year for five years! Compare this with the estimate Year+1 sales of 472,508 ranges, 1,567,862 refrig-

erators and 215,798 water heaters. And isn't the Gas Industry going to have anything to say!

I realize that I too have joined the ranks of those making various unwarranted assumptions but my alibi is that the picture would be worse than that already drawn and then I will be accused of things! Yet, it is obvious that for the electric industry to depend on range, water heater and refrigerator sales to double the present domestic use in the first five post-war years is really "wishing on a star," isn't it? There is of course the lighting load, heating and air conditioning fans and blowers, television sets, extra radios, quick freezers, cold storage cabinets and many small appliances; truly a formidable list to help swell the post-war domestic electric use. But, such gains may be off-set to some extent by many (at least 40%) of the refrigerator sales being replacement units of greater efficiency, thereby reducing the customers' use. Other factors not to be ignored will be the trend toward smaller homes, apartment house construction to rehabilitate older sections of the larger cities, and housing projects to replace the slum areas, all of which may tend to retard the effect upon consumption of new electric range and water heater installations.

All of the foregoing might seem like a statistical merry-go-round where figures have been tossed about in rather optimistic abandonment. The situation isn't quite as bad as all that, yet it is hoped that the above analyses will encourage more serious attempts to arrive at reasonable estimates of objectives ahead for the Electric Industry.

Such objectives should not and cannot disregard the existence of the Gas Industry. The Post-War Planning Committee of the American Gas Association has presented to the gas industry a vital program of considerable proportions with recommendations of a definite promotional character. These have been very favorably received by the executives of the Gas Industry and active steps are being taken to implement the industry's post-war plans.

This dissertation would not be complete without some indication of what the gas industry faces in post-war markets. A recent saturation survey by the Office of Civilian Requirements of the War Production Board reports the following figures:

TABLE #5

Estimated Number of Appliances in Households

Appliance	Northeast	North Central	South	West
Cooking stove—gas	6,885,344	6,617,952	3,910,608	2,891,176
Cooking stove—elec.	607,899	1,351,583	808,443	775,019
Water heater—gas (All)	2,034,680	3,129,324	2,134,960	2,193,452
Water heater—elec.	186,921	428,245	286,193	302,905

TABLE #6

Number and Type of Utilities (over $5,000,000 in assets)		Total Fixed Capital Amount	% of Total
Straight Gas			
Mft'd Gas	25	$ 494,790,690	3.0%
Natural Gas	16	771,697,484	4.6
Mixed Gas	9	675,133,934	4.0
Sub-total	50	$1,941,622,108	11.6
Straight Electric	82	5,341,170,024	31.7
Combination Gas and Electric	116	9,543,313,597*	56.7
Total	248	$16,826,105,729	100.0%

It is claimed by WPB that more than two-thirds of the gas stoves are more than five years old. The gas water heater figures are in some doubt and it is urged that the gas utilities determine immediately how many automatic water heaters they really have on their mains. This information is vital and indicates the need for each company to know its own market conditions, because it is evident that considerable promotional attention should be given to the automatic gas water heater as it affords a definite gain in consumption, whereas the replacement of a gas range merely holds existing business. However, as repeatedly pointed out, the statement, "how goes the range so will go the water heater," emphasizes the key part that the range plays in the kitchen picture.

No observations on the "gas versus electricity" problem in the domestic service field can well avoid some reference to the weight of the combination companies on the ability of either the Gas or Electric Industry to reach their respective post-war sales objectives. The following analysis of operating utilities, with assets in excess of $5,000,000 each, reveals the relative magnitude of the 2 industries and the significant size of the Combination Companies:

From the above comparison, it should not be difficult to appreciate the importance of Recommendation #9 of the A.G.A. Post-War Planning Committee, wherein it is stated,

"Both the Gas and Electric Industries are recognizing that there are definite fields wherein each service is complementary or best and that the combination of services can be to the interest of both the consumer and the utilities."

Now that it is definitely established that the flued and ventilated gas range in the American Gas Association's Coordinated Kitchen Program is a post-war certainty, the comfort-conditioned and clean gas kitchens will become a post-war reality for all to enjoy.

Such gas kitchens of tomorrow with their appropriate electrical features will utilize both services in their proper spheres to the advantage of both customers and utility investors, and at the same time contribute to the fundamentally sound, vital and most efficient use and conservation of the natural resources of the Nation.

Engineering and Economic Phases of Our Industry

By
Hall M. Henry

THE several studies and investigations to be undertaken by this committee have not all been completed. However, some of the studies have progressed to a point where certain inescapable conclusions are evident. These are as follows:

Economics of Heating

No. 1. The Heating load for many of the companies is the key to future load building.

No. 2. Some few companies can through the expenditure of relatively small sums of money to correct bottlenecks in plants and Distribution systems — take on and supply economically substantial additional volumes of heating loads.

No. 3. Other companies whose present plant facilities are being used to capacity—will need to exercise considerable ability and ingenuity to be able to expand plant facilities to serve additional heating loads economically.

No. 4. Except for certain areas the use of Propane or Butane for peak loads does not appear to offer a solution to the serving of the heating load on an economical basis.

No. 5. The Distribution investment to serve the heating loads of present customers is the relatively minor investment of the total.

No. 6. The Production plant equipment is the most serious part of the investment cost to serve the heating load.

No. 7. The Production plant equipment investment costs are made up of the following approximate percentages.

1. Generating equipment (Sets, blowers, blast headers, etc.) 20 to 30%
2. Boilers including Steam Accumulators, 20 to 30%
3. Cleaning Gas — Condensers, Purifiers, Cottrells, etc. 15 to 20%
4. Miscellaneous Items—Meters, Exhausters, pumps, piping, buildings, land, 20 to 40%

No. 8. To substantially lower production investment costs will require a gas process which will minimize the need for items 2, 3, 4 (of No. 7) as well as Item No. 1. In other words, to merely find some way to increase capacities of generators effects a reduction in only one of several items which comprise only 25% of the total investment.

No. 9. The industry needs and must have a low investment cost plant to meet peak loads of heating.

Economics of Sales

From the Economics of Sales Manufactured Gas Report we can draw the following conclusions:

No. 10. The gains made in M.C.F., Gross and Net Operating Revenues for the six years prior to the *war varies widely* as between individual companies.

No. 11. The differences in results *do not appear to be due to local competitive* conditions, since companies similarly situated show a wide difference in the gains made.

No. 12. The major reason for the widespread *difference* in performance seems to be due to *local company policies.*

Appliance Survey

No. 13. The gas appliances available prior to the war, were, in general, adequate to meet competitive appliance performance.

No. 14. There seems a need for improving and strengthening certain parts of gas appliances so as to reduce servicing costs. This applies to both domestic and commercial appliances; the latter particularly needs drastic improvement from a servicing viewpoint.

No. 15. There is a real need for a fully automatic safe lighting pilot. This lighting equipment should *never require the use of a match.*

Research

No. 16. There is a need for a Director or Coordinator of Research.

No. 17. The industry needs to undertake immediately an aggressive gas production research program. The future of the manufactured gas division of our industry may well hinge on our ability to secure a low investment cost gas production plant.

No. 18. The industry also needs a distribution research program — on ways and means for lowering the distribution investment cost to serve fringe customers particularly and the distribution investment costs to serve heating loads may well receive attention.

No. 19. The industry to continue and enlarge its utilization research program. Especial attention should be given to the development of fully automatic lighting pilots. (No match ever required). We should no longer allow our crude competitors to boast of the ability to use his equipment *without ever having to use a match,* when most all of our equipment requires the use of a match to light a pilot.

No. 20. The industry should undertake to make periodic (yearly or when new ma-

jor developments occur) determination of the relative operating costs between gas and competitive fuels under normal conditions of service and use for the following purposes:

a. Cooking — using gas vs coal, oil, electricity and bottled gas.
b. Water heating—when obtained under the following conditions:
   1. Tank heater — gas vs electricity and oil.
   2. Automatically controlled storage water heater—gas vs electricity and oil.
   3. Instantaneous — gas vs electricity, oil and bucket a day coal.
   4. Central heating plant—gas vs coal and oil.
   5. Kitchen stove—gas vs coal and oil.
c. Refrigeration—gas vs electricity, oil, bottled gas and ice.
d. Heating — gas vs oil and coal.

The above findings, while not official in every respect, are fully justified from the Engineering and Economic studies thus far completed. The summary of detail work done and action taken to date are as follows:

Research

Early in 1943 a survey was made of certain members of the Technical Section for suggestions for research. The suggestions thus obtained were then summarized and sent to the entire membership for placing in order of importance and asking for additional research ideas. The major items suggested were:

A. The Upgrading of Low B.t.u. Gases without the Use of Oil.
B. Partial Carbonization of Coal Prior to Utilization.
C. The Upgrading of Coal into Liquid Fuels and Gases and the Conversion of Gases into Oily Substances.
D. Processes for Utilization of Gas Production Facilities during Off-peak days for Other Purposes.
E. Review of Perry Gas Making Study.

Some forty replies were received but owing to the general importance of all of the research suggestions it was not possible to make an exact determination of those research ideas considered of *first importance*. About this time the Post-War Planning Cooperating Committee of the Technical Section was formed and the problem of determining the most important research projects was referred finally to a subcommittee headed by Mr. Lee Robey of Washington Gas Light Company. This committee after weighing the matter decided the problem too important to make a decision without a survey of the literature and asked for and have now received $8,000 for this work. The action taken—scope of the work and progress to date is given in the following report from Mr. Robey:

"Report of P.W.P. Cooperating Committee Subcommittee on Topics Assigned to Institute of Gas Technology.

At a meeting of the concerned committee representatives in New York, June 5, 1944, the Subcommittee of the Post-War Planning Cooperating Committee was given four topics for investigation in order to determine a definite plan of active experimental research leading to conclusions of benefit to the Gas Industry, particularly in the post war period. These topics and their scope follows:

A. Low investment cost gas production processes with specific reference to:
   1. I.G.T. Fluidizing and Flash processes.
   2. Loebel process.
   3. American Cyanimid low temperature carbonization process.
   4. Murphy process.

This survey will comprise in addition a review of many gas making processes toward the selection of the few meriting experimental research.

B. Utilization of Natural Gas condensates (ethane-propane mixtures largely) by the gas industry with particular reference to gas making utilization, either by the manufactured gas industry or the natural gas industry, or both. This study will cover availability, shipment, storage, utilization for enriching (hot or cold), reforming and other uses which may benefit the Gas Industry. Special emphasis should be placed upon quantity, availability and cost delivered to East Coast.

C. Methods for the utilization of "Off-peak" gas capacity for purposes other than the supply of gas to normal domestic and commercial users. These processes to use much of existing gas plant apparatus.

This study will develop uses or services by the gas plant which will reduce the amount of plant shut down in summer period.

D. Report on Present "State of the Art" on:
   Fischer-Tropsch process
   Hydrogenation of coal
   Up-grading of low B.t.u. gases

This report will define these topics, bring the industry up to date on the subjects and will indicate the possible utilization of these processes for or by the Gas Industry.

As of September 1:

A. *Low Investment Cost Gas Production Apparatus*

Literature research on existing plants other than conventional water gas plant, is approximately complete. It is hoped that a preliminary draft of the report will be completed by September 30. A report has been received from E. J. Murphy on his work on up-grading blue gas by a catalytic method.

B. *Utilization of Natural Gas Condensates*

Preliminary draft on substitution of air gas mixtures for coal gas and carburetted water gas is being typed. Preparation of preliminary drafts on use of propane and butane supplementing peak loads, with both manufactured and natural gas, also reforming and catalytic gasification to CO. + H_2 with subsequent cold enrichment to 550 Btu, will be completed by September 30, 1944.

It is hoped that arrangements will be made by September 15 for a report on the availability, costs, etc., of Natural Gas Condensates, with a man well qualified to obtain the desired information.

C. *Utilization of Off-peak Gas Capacity.*

Since the last Progress Report, very little has been done. Some pertinent data has been obtained from U. S. Department of Commerce.

D. *Present "State of the Art" of Fischer-Tropsch and Coal Hydrogenation*

Literature search is approximately complete. Preliminary draft of report on Coal Hydrogenation is completed. Preliminary draft on Fischer-Tropsch is about 50% complete.

As can be seen from the foregoing report of progress, it is expected that two of the reports will be ready for criticism by October. The deadline set for the I.G.T. work was December 31, 1944.

Methods for Increasing Capacities of Existing Equipment

In addition to the above the Technical Section Cooperating Committee has under way through Mr. Pfluke of Rochester, a study of methods which have been used by companies to increase capacities. A preliminary report was made by George Steere of methods in use for increasing *generating capacities.* This study will be extended and enlarged. We are hopeful that the Technical Section can obtain the following relative to these methods for which we have asked their help.

1. The amount of gain in M.C.F. per hour or per day from the new method or process.
2. The cost per M.C.F. to bring about the increase in capacity.
3. Whether or not the maximum gain possible from the new method was determined.
4. If the answer to No. 3 is "No" recommend action the industry might undertake relative to the various methods.

The following is a list of certain suggestions for increasing capacities and on which additional research might well be undertaken to develop the maximum potentials possible with the new method or process or fuel.

Method of Increasing Water Gas Sets

1. Increase in air volume where insufficient at present—(50% increase of capacity from 40" to 80" pressure).
2. Reducing the cycle from a four or five minute cycle down to three minute cycle.
3. Use of Butane in place of oil as enricher (Hot enrichment).
4. Cold enrichment by Butane.
5. Butane and air mixture with gas.
6. Use of oil on the back run.
7. Use of oxygen.
8. Use of soda ash with generating fuel.
9. Use of preheated air.
10. Auto water grates and charging.

Method of Increasing Capacity Coal Gas

1. Mixture of oil and coal.
2. Oil and steam into Back End of stopped End Retorts.
3. Butane or Propane cold enrichment.

This study of ways and means for increasing capacities of existing gas generating equipment is highly important as it is one way to meet the high investment cost of serving peak loads pending the results from research. However, all of the above deals with increasing capacities of the gas generating equipment and only one or two of the suggestions will lower the investment cost in condensers, purifiers, exhausters, etc. Therefore, we hope to learn in addition to the above what individual companies have done to increase capacities of the other parts of their plant investments and to develop the greatest gain possible with the new method or processes.

Separate Firing Waste Heat Boilers

In view of the relative size of the steam equipment investment to the total we might undertake to determine a safe and a practical method for firing waste heat boilers during the make period. According to preliminary discussions with competent people this does not present too serious a problem. However, an experimental installation should be made. If a safe and inexpensive method can be developed it will help reduce boiler investment costs.

Separate Enriching Gas from Blue Gas

The industry might also explore the effect on plant investment costs and operating costs of *separating the oil gas* for enriching purposes from the blue water gas. By such a procedure we could do several things which should substantially lower plant investment costs. For instance—

1. By making only blue gas made from coke the blue gas, as well as the blast gases, could be put through the waste heat boiler. This should help reduce steam generation investment.
2. The size of the Cottrell (if used) and of the condensers could be reduced as only the oil gas volume will contain tar and would need to be put through the Cottrell.
3. The size of the condenser for the blue gas could be reduced as no heat transfer allowance would have to be made for tar on the tubes.
4. The condenser on the blue gas could be used as a feed water heater.

This entire problem of separating the enriching gas from the blue gas might well receive careful study as it does offer some hope of lowering plant investment costs.

Butane or Propane

There is urgent need for research on the effects of using Butane or Propane for enriching purposes. The Butane and Propane industry are interested in the possible use of their product for peak loads and are now carrying on a number of studies for our committee. We have also asked them to see what additional research they can finance and to let us know wherein they will need our help. One of the major hurdles to overcome is that of storage of the liquid fuel. The liquified petroleum industry has developed a market for its product which is distributed uniformly throughout the year. They do not seem interested in supplying Butane or Propane for peak periods only. This means the utility must provide storage tanks of sufficient capacity to allow uniform shipments throughout the year. This creates a serious financial investment problem in storage tanks. Here again the liquified petroleum people are studying the most economical means for storage purposes. We should shortly have some data to report on this part of the problem. A study of Butane and Propane for peak load purposes is under the direction of Mr. Pfluke to develop the presently known facts as to its use.

In the matter of research let us repeat our industry can go forward with confidence *only if we can find an economical peak load production gas plant.* Hence we should immediately engage in research and study of all ideas which hold out hope for lowering *a part or all* of the investment costs inherent in gas production. We cannot—we must not—delay in attacking this vital problem. There is ample evidence to show that certain companies have been able to build gas loads with the relative inadequate National Advertising in force prior to the war and without any National Sales Promotion Staff. *There is no question then* but that the industry *can expand its sales* with the *help of the proposed enlarged National Advertising and Sales Promotion Program—provided each company will adopt sound local sales policies and use an adequate sales force.* There is, however, no denying the fact that these larger sales, if largely heating loads, will be for a substantial portion of the manufactured gas companies a financial hazard, *unless we can solve our production investment cost problems for peak loads.* Hence our industry should give full and unqualified support for the new one million dollar industry development program shortly to be launched.

New and Improved Appliance Survey

The industry survey of improved and post-war appliance needs, made under the direction of Mr. F. M.

Rosenkrans, needs no elaboration. The survey has been completed and mailed to the interested parties. The manufacturers are using this survey with other regional surveys in planning new and improved post-war appliances. The committee has done all it can do at this time—it is up to all of us to see that the manufacturers with whom we do business take to heart the findings of the survey and incorporate the recommended improvements into their product.

Economics of House Heating

This study is going forward slowly but surely. Three of the four economic studies dealing with production plant investment and operating costs on House Heating to be made by individual companies have been completed. The fourth has been held up due to local company problems but we are promised an early completion.

The Distribution Committee is attempting to collect data as to diversity of various loads to be used in distribution design. They will also prepare a suggested basis for a study of the Economics of Distributing Gas For Heating Purposes.

The data thus far obtained seems to indicate that our major problem is plant investment to meet peak demands. The nature of this investment has been previously outlined under Research. The distribution investment does not seem to present a serious problem either among present customers or for customers in new areas.

Economics of Sales

The Economics of Sales Study Manufactured Gas is complete and has been distributed as Report No. 4, A.G.A. Post-War Planning Committee. The Economics of Sales Natural Gas is going forward under Mr. Vandagriff of the Laclede Gass Light Company, St. Louis. The Natural Gas companies can help expedite this study by cooperating with Mr. Vandagriff in getting the needed data to him on their own companies.

Other Engineering and Economic Studies

The following studies have been given to Mr. Pfluke, Chairman, Production Committee of the Technical Section, by the Post-War Planning Cooperating Committee of the Technical Section.

Use of Oxygen

A preliminary report on the use of oxygen for gas making has been made by Dr. Steve Burke, Chairman of a subcommittee, to study this problem. The preliminary findings seem to indicate that we may have reached the time when oxygen can be used economically.

As a further aid in a study of this subject Dr. Burke has suggested that research be undertaken on a study of the kinetics of the reaction between Carbon Dioxide and Carbon—Steam and Carbon—Pure Oxygen and Carbon—separately and in admixtures of any of the three gases.

The Most Economical Btu Gas to Make

Mr. Pfluke reports he has had some difficulty in sufficiently isolating the problem so as to reduce it to a set of conditions which would be of value to the industry. He had hoped to clear these difficulties at the same time of the Production Conference in June but illness prevented his presence so this study is held up temporarily.

Director or Coordinator of Research

The Committee, in view of the importance of research to our future, and of the need to carry on studies and research among the gas companies in addition to those to be financed through the Institute of Gas Technology and other sources, has recommended the employment of a full time Director or Coordinator of Research. This matter was submitted to the Coordinating Committee on Research which recommended as follows:

First: To recommend to the Managing Committee of the Manufactured Gas Department that provision be made in the Association budget next year for the appointment to the Association Staff of a Coordinator for Gas Production Research, such research to be considered and determined by the Department.

Second: That the matter of an overall research Director or Coordinator be related to the proposed enlarged program for Association research, and that action be taken at that time.

It is hoped that the Manufactured Gas Department will act favorably on these recommendations.

In conclusion, the Committee will welcome suggestions for Research and Engineering Studies and especially does it ask for criticism of the work done and recommendations made to date. The Committee desires to be of help to the industry in seeking a solution to our major problems but believes that only through a frank and critical appraisal of the work done and proposed can this be realized. So let's hear from you.

Research Project of University of Oklahoma

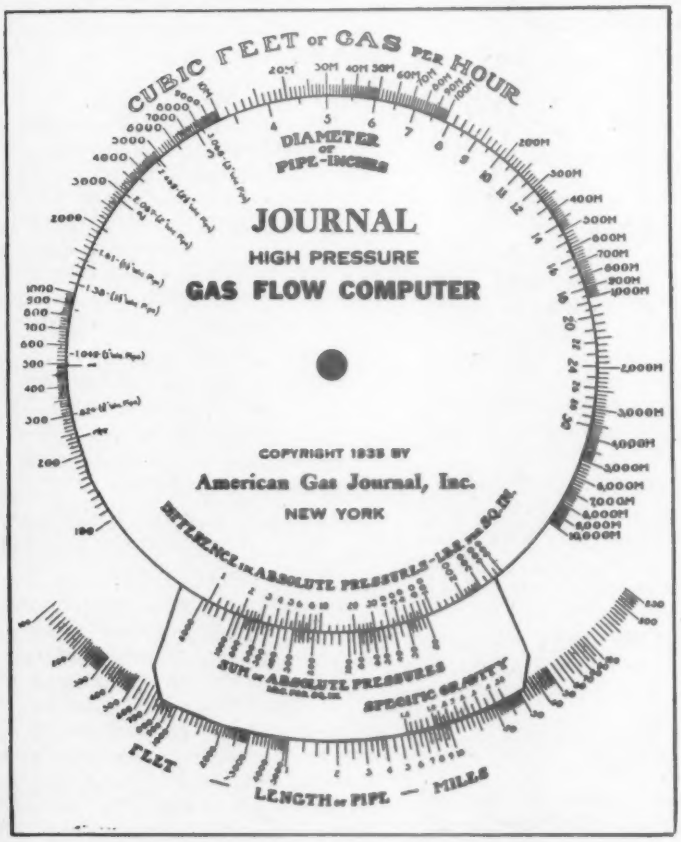
The University of Oklahoma, Norman, Oklahoma, is undertaking a research project on the drying of gases by Activated Alumina, from a chemical engineering point of view. The investigation which is financially supported by the Aluminum Company of America, is under the direction of Dr. R. L. Huntington, Chairman of the School of Chemical Engineering. He will have the part-time assistance of Professors G. F. Russell and F. F. Blankenship.

CRUSE-KEMPER COMPANY
AMBLER, PA.

We are working on War Equipment and supplying Essential and Emergency Requirements for the Gas Industry.

GAS HOLDERS, GAS HOLDER REPAIRS, PURIFIERS
COMPLETE GAS HOLDER INSPECTION SERVICE
41 YEARS OF SOUND
STEEL PLATE CONSTRUCTION

"Journal" Gas Flow Computers



New Improved Gas Flow Computers now available of durable celluloid, encased in a convenient leatherette cover with complete instructions.

Actual Size 6¼ x 7½

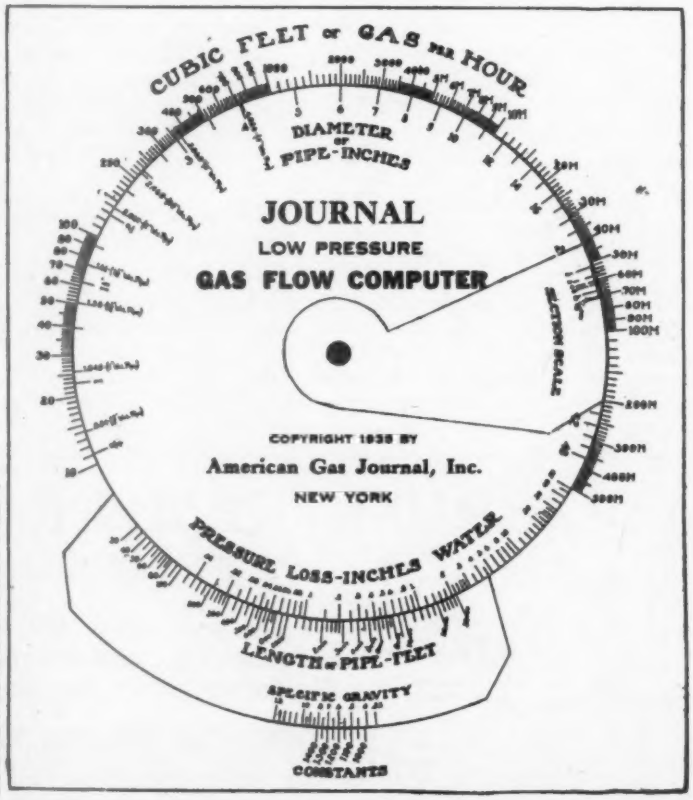
High Pressure Computer Range:

Cu. Ft. of Gas Per Hour—100-10,000 M
Diameter of Pipe Inches ¾-30
Difference in Absolute Pressure—Lbs. per sq. in. 1-500
Sum of Absolute Pressures—Lbs. per sq. in. 2000-20
Specific Gravity 1.5-.35
Length of Pipe—Feet 100-5000
Length of Pipe—Miles 1-250

Low Pressure Computer Range:

Cu. Ft. of Gas Per Hour—10 to 500 M
Pipe Diameter ¾" to 48" (including standard and actual weight up to 4")
Pressure Loss Inches .01-10.
Length of Pipe—Feet 30-30,000
Specific Gravity 1.5-.35
Constants 1400-1000

Price $3.50 Each, Postage Prepaid



AMERICAN GAS JOURNAL
53 Park Place, New York

Please enter our order for Computers as follows at $3.50 each, postage prepaid

....HIGH Pressure Computer

....LOW Pressure Computer

NAME .....

ADDRESS .....

51st Annual Meeting of the Pacific Coast Gas Association

By
Fred A. Herr

THE Pacific Coast Gas Association, representing the industry in the western states bloc comprising California, Arizona, Nevada, Oregon, Washington and the Province of British Columbia, convened in its 51st annual meeting at the Ambassador Hotel, Los Angeles, September 13 and 14.

That the membership is keenly aware of the value of such annual gatherings to keep posted on developments in and related to the gas industry, and the complexity of problems arising out of the war, was attested by the registration which was announced by Clifford Johnstone of San Francisco, managing director of the PCGA, as totaling 773, or approximately 100 higher than the 1943 attendance.

Five Primary Subjects

Out of a comprehensive program of deliberations which touched upon various phases of gas utility operation, ranging from operational and merchandising problems to home economics and technical matters of maintenance, five major subjects emerged to keynote activities.

These subjects were:

1. . . . The state of business in the third year of the war; how the war emergency has affected the gas industry thus far; and the chances of gas utilities weathering the war's impact during the forthcoming year without serious impairment of their functions.

2. . . . A presentation of the industry's part in the war effort and how emergency practices now in vogue can, as the war pressure eases, be gradually replaced by peace-time procedures.

3. . . . Post-war plans for the industry as a whole and specific programs aimed at "reconverting customer attitude" to the changed supply-and-demand situation which will prevail when limitations on appliance manufacture have been removed and manpower shortages have eased.

4. . . . The need for a definite industry-wide plan for enabling the gas industry to meet competition from the electric utilities with greater success than in the past.

5. . . . The post-war disposition of government-owned war plants and the importance of an effective Federal plant disposal program to the gas industry.

General and Sectional Meetings

The program was divided into one general business session on each day with parallel meetings of various association divisions, such as the manufacturers, technical, accounting,

sales-advertising sections, being held each morning and afternoon. The only relief from business discussion in the form of entertainment was offered at the annual banquet on the night of September 13.

The convention opened with a meeting of the Manufacturers' Section in the Modern Room, Ambassador Hotel, 9:30 a.m., September 13. A. H. Sutton, president Mission Water Heater Co., Los Angeles, who presided, introduced association president E. L. Payne, head of the Payne Furnace and Supply Co., Beverly Hills, Calif.

Mr. Payne warned the manufacturers of gas appliances and equipment against undue haste about getting into civilian production which might cause them to lose sight of current war needs. Production for war, Mr. Payne emphasized, is still the primary duty of every manufacturer of appliances and other equipment, and any plans for reconverting to domestic production must be accomplished with full realization that ". . . the war still comes first."

"The war," Mr. Payne said, "has brought manufacturers and the utilities closer together and at the war's end I hope that we can continue the splendid cooperation and spirit of mutual collaboration for a common goal that we enjoyed during the war years."

Report By Section Chairman

In his report on the activities of the manufacturers' section during the past year, Section Chairman Sutton cited the work of the heating division in collecting data on sales prospects. Mr. Sutton reported that his section had received a number of requests for information concerning new dealer outlets and that the association has agreed to issue such information provided the servicing of appliances is performed by competent personnel.

During the year the Manufacturers' Section requested the American Gas Association and the Association of Gas Appliance and Equipment Manufacturers to establish standards so that fuel supplied to member lines will be properly clean and ready for efficient and effective use, Mr. Sutton reported.

He revealed that 17 members of the section were honored by being awarded the Army and Navy "E" banner for efficient production during the year.

The first programmed speaker at this session was W. M. Jacobs, manager, general sales, Southern California Gas Co., Los Angeles. His subject was "Future Sales Effectiveness—Can It Be Improved by Joint Effort."

Mr. Jacobs pointed out that many prognosticators contend that the huge pent-up buying demands, when released after the war, will keep American plants busy producing goods and filling orders.

"Probably most of us in the gas appliance business are realistic enough to know that not for long can this demand, of its own momentum, continue to equal output," said Mr. Jacobs. "War-learned production techniques will turn out vastly greater quantities of home appliances than before. Perhaps sooner than we expect, we will be facing the job of bringing about even higher standards of living, in terms of civilian goods purchased, in order that plant output may continue to be absorbed."

That latter factor, Mr. Jacobs insisted, will focus attention on sales effectiveness, for ever increasing effectiveness of marketing processes, he declared, will surely be the key to mass penetration of markets.

Better Co-ordination Urged

Mr. Jacobs asserted that notwithstanding that manufacturers are operating in a competiive system whereunder each must strive for himself, and manufacturers and gas utilities have different jobs to do, there still exists considerable common ground and mutual interest that can, through better co-ordination, be made to pay off in improved sales effectiveness.

"First," he said, "let me offer the proposition that such co-ordinated effort should aim at the dealer; retailing outlets will increasingly be the line of action in the future distribution pattern. This fact is clearly apparent on the Pacific Coast where by far the majority of all ultimate transactions of appliance purchases are carried out by the appliance retailer in his store or in the field, but in any event remote from the supplier's doorstep and beyond his direct control. The trend appears to be still further in this direction, and the retailer has become the focal point for promotional effort of most of our mutual competitors in the home appliance field."

Mr. Jacobs submitted as his second point that coordinated effort aimed at retailing outlets boils down to sales and promotional training, primarily. He recommended that more be done, and more effectively, by joint effort between the utilities and the manufacturers.

Pattern for Joint Effort

Mr. Jacobs offered a pattern for joint effort to improve sales effectiveness as his third point by suggesting a mutually justifiable pattern for joint collaboration in bringing about greater effectiveness in future appliance sales.

As parts of the joint pattern, he offered the following:

(a) Discounting sales arguments concerning features of particular makes of appliances, salesmen selling electric ranges (but not gas) were found to offer, voluntarily, 47% more arguments in favor of electric ranges than salesmen selling gas ranges (but not electric).

O. R. DOERR
President
Pacific Coast Gas Assn.

(b) Salesmen selling both kinds voluntarily offered 100% more arguments in favor of electric ranges; when pressed by questions from the samplers, they dug up a total of 368% more arguments for the electric than for the gas.

(c) An examination of the sales arguments used shows more thorough training of electric salesmen in fundamental appeals of electric cooking; gas range arguments centered around the "nuts, bolts and gadgets."

(d) The samplers were voluntarily given an average of 65 items of advertising literature and pamphlets per call, by the electric salesmen, against 4 by the gas.

(e) Some excerpts from comments in the reports of the individual samplers:

"Electric salesmen all seemed so thoroughly sold on their product."

"Gas dealers seemed passive."

"Electric salesmen all have a cohesive story, but no two gas dealers give you the same arguments."

"Electric salesmen represented a solid and thorough organization and training, in contrast with purely personal salesmanship of gas salesmen."

O. R. Doerr on Post-War Sales

O. R. Doerr, general sales manager, Pacific Gas & Electric Co., San Francisco (and newly elected PCGA president), presented a paper entitled "The Utilities' Place in Post-war Sales Promotion."

Mr. Doerr asserted that manufacturers of gas appliances on the Pacific Coast have passed through three years of war and now face the pending period of reconversion to peacetime production physically and financially stronger than ever before, which, he declared, augurs well for the ruggedness of the gas industry.

Posing the question: "How Can we get the biggest volume of appliances into the hands of the consumers after the war?", Mr. Doerr offered the following answer: "Do exactly what you were doing before the war but do it in a bigger and better way."

He offered five points of a broad basic policy which, in his opinion, will create a prosperous post-war manufacturing and fabricating business for the gas industry:

1. Adequacy, dependability and continuity of gas supply.

2. Quality of gas supply, because it is the function of a utility to deliver gas of uniform dependability and cleanliness.

3. Holding and building greater public acceptance of gas as the ideal fuel.

4. Co-operative policies of sales promotion and service between manufacturers and utilities.

5. Training of individual personnel. In this connection, Mr. Doerr stated the effects of the war had had equal impact on the utility firms' personnel and clientele. The negative attitude which personnel has developed toward customers as a result of the war and a reversal of normal business procedure, cannot be wiped out merely by signing a peace treaty, Mr. Doerr warned. What is urgently needed after the war, he declared, is a comprehensive program for retraining both customers and personnel.

Says Federal Control To Remain

Leonard Macomber, Washington, D. C., representative of the A.G.A.E.M., discussed developments in the national capital as they affect the gas industry, under the subject "What's Cooking In Washington."

Mr. Macomber told the manufacturers that Washington planning is based on the assumption that Germany will be the first of the remaining enemy countries to surrender and that only about 60% production capacity will be needed for the subsequent defeat of Japan. Forty percent, according to Washington official estimates, will then be available for turning back to civilian use, Mr. Macomber explained.

Concerning possible withdrawals of government restrictions in industry and materials, he said:

, "As I see it, if only 50% of production capacity is retained for war needs, Washington will continue to exercise its controls. WPB and WMC regulations will continue, in my opinion, even after Germany has been knocked out."

Mr. Macomber warned against a too optimistic view when Germany is eliminated.

"If you have war contracts," he said, "do not let undue optimism sway the least of your workers from doing his best. We still need, and will continue to need, a vast volume of war supplies."

Mr. Macomber added that he does not look for a complete relaxation of government controls over business even when both phases of the war have ended. He expressed the opinion that government controls will continue in effect, in the form of allocation of critical materials.

Opposing View Cited

In the final talk given at the meeting of the Manufacturers' Section, W. C. MacDonald, deputy director, plumbing and heating division, WPB, Washington, declared he was inclined to take a view somewhat different from the one held by Mr. Macomber regarding a continuance of government restrictions.

It is the hope of the WPB, Mr. MacDonald declared, to so regulate its programs that a return to production of domestic needs can be accomplished wherever and whenever such action can be taken consistent with the needs of the war.

He declared that the WPB is hopeful that in the near future restrictions can be removed entirely from gas ranges. On the whole, however, he warned, there can be no wholesale relaxation of restrictions until the war had been ended.

E. T. Howard New Chairman

The Manufacturers' Section elected the following officers for the 1944-45 term, as submitted by a nominating committee composed of George P. Egleston, chairman; Howard Dyer and H. J. Lovett:

General chairman: E. T. Howard, General Controls Co., Glendale Calif.; vice-chairman, Henry Honor, Western Stove Works, Los Angeles.

Accessories Division: A. C. Arden, chairman; M. H. Kennedy, Domestic Thermostat Co., Los Angeles, vice-chairman.

Heating Division: C. A. Gabriel, Monarch Heating Co., Los Angeles, chairman; H. F. Larkin, O'Keefe & Merritt, Los Angeles, vice-chairman.

Water Heater Division: R. W. Tarleton, Southern Heater Co., Compton, Calif., chairman; Claude Ballinger, Rheem Mfg. Co., Los Angeles, vice-chairman.

Alternates to general chairman and vice-chairman on board of directors of the A.G.A.E.M.: F. C. Packer, Payne Furnace & Supply Co., Beverly Hills, Calif.; and E. S. Hoyt, Jr., Hoyt Heater Co., Los Angeles.

Association Head Speaks

With E. L. Payne, association president, presiding, the first general luncheon session was held at 12:15 p.m., September 13.

After formally declaring the 51st annual convention officially open, Mr. Payne introduced the following who were seated at the speaker's table:

Past Presidents: A. F. Bridge, Southern California Gas Co.; R. S. Fuller, Pacific Gas & Electric Co., and G. S. Wade, president of Southern California and Southern Counties Gas Co.; W. J. McCoy, controller, Southern California Gas Co.; A. H. Sutton, Mission Water Heater Co.; E. T. Howard, General Controls Co.; H. W. Edwards, Coast Counties Gas & Electric Co.; F. F. Doyle, Pacific Gas & Electric Co.; F. C. Packer, Payne Furnace & Supply Co., and general chairman of the convention arrangements committee; and Clifford Johnstone, manager director of the P.C.G.A.

A brief tribute of silence was paid to members who passed away during the year, as Mr. Johnstone read the names: These included: George P. Heitz, Southern California Gas Co.; A. C. Joy, Pacific Gas & Electric Co.; J. H. Fagg, Pacific Gas & Electric Co.; Otto Goldkamp, San Diego Gas & Electric Co.; Hobart Gibbs, Southern Counties Gas Co.; George C. Knox and Bert Embry of Southern California Gas Co.; Hilmar Pabst, Portland Gas & Coke Co.; and R. E. Cole.

New Officers Elected

The following were elected to guide the affairs of the Association during the ensuing year and, possibly, to direct the PCGA through the pitfalls of the first full or partial post-war year:

President, O. R. Doerr, general sales manager, Pacific Gas & Electric Co., San Francisco; vice-president, H. W. Edmund, vice-president and general manager, Coast Counties & Electric Co., Santa Cruz, Calif.; treasurer, D. G. Martin, general auditor, Pacific Gas & Electric Co.

Directors for two-year terms: F. M. Banks, vice-president, Southern California Gas Co., Los Angeles; R. G. Barnett, vice-president and general manager, Seattle Gas Co., Seattle, Wash.; and E. T. Howard, sales manager, General Controls Co., Glendale, Calif.

In the "President's Address," Mr. Payne, the incumbent, cited the fact that 1943 was the biggest year of all time for Pacific Coast gas companies. He declared that West Coast gas firms had more customers and delivered more gas that year than in any previous like period.

"Reports indicate," Mr. Payne said, "that in 1944 these records are being broken with sales in cubic feet up 16% and customers up 2½% over last year. With a minimum of new facilities, with only the most essential repair and maintenance of existing equipment, with decreased manpower, the gas industry of the West Coast has fulfilled its duty to supply even more fuel to keep the fires of industry alight and the homes of workers comfortable.

"Just as the utilites have their problems, both natural and war-created, so do the manufacturers have theirs, and some of them are very real problems and very urgently calling for solution. Some of the problems are within the plants themselves, and some, like those of the utilities, are inter-connected with yours."

Mr. Payne stated that since the utilities as well as the manufacturers have much to do to put their plants in top condition, it is timely to state that one of the problems confronting the appliance manufacturers is that posed by so many varying gas con-

ditions of b.t.u., specific gravity and flame characteristics.

The technical section of the association, Mr. Payne declared, has undertaken the study of this subject, which he referred to as being of vital importance, also, to the sales, service and public relations departments of all gas firms.

"The year ahead will demand much of us to meet problems as yet unforeseeable," Mr. Payne added. "The members of this association in the past have contributed many things to the national industry, and I am sure their vision will continue to give much toward the solution of the postwar problems of the whole industry.

"A problem," Mr. Payne continued, "which calls for utiilty cooperation wtih the manufacturers is that of sales policies. How appliance makers may arrange their distribution depends upon sound sales plans for utility groups. It is very important that those plans be clearly outlined at an early date so that manufacturers in turn can get plans ready for that day when we again can serve your customers."

A.G.A. Official Speaks

A Message from the A.G.A., was presented at this session by George H. Smith, assistant managing director of the A.G.A. and director of its natural gas department. Mr. Smith quoted freely from a report of the A.G.A. post-war committee in outlining programs of competing utilities which the gas companies will have to meet in the immediate postwar years. His address appears elsewhere in this issue of the JOURNAL.

Final speaker at the September 13 noon session was Col. Willard F. Rockwell, president, A.G.A.E.M. and head of Pittsburgh Equitable Meter Co., Pittsburgh, Pa.

"It is important to every thinking American that some use can and must be found to utilize the billions of dollars worth of plants built for war production," Col. Rockwell said. "To convert as many of those plants as possible to the manufacture of peace time products is essential. Some way can and must be found to help those converted to change-back to their peace-time pursuits. Some equitable, sane way must be found to remove the menace of huge surpluses from our natural competitive markets. These means must be applied, when they are found, so that our entire Democratic living shall not perish."

A.G.A. Research Described

Parallel sessions of the Manufacturing Section and the Women's Committee were held September 13.

In the Manufacturers' meeting, W. R. Teller, Cleveland, O., assistant director, American Gas Association Laboratories, outlined the domestic gas research activities being conducted by the A.G.A. The data which Mr. Teller presented, with few exceptions, was derived from investigations conducted by the A.G.A. laboratories since the technical conference on domestic gas research was held in Los Angeles in March, 1944.

Mr. Teller stated that one of the basic problems attacked by the Committee of Domestic Research has been the automatic ignition of gas and that efforts have been directed toward both electric igniters and gas pilots. In the latter category, he said, consideration was given to development of principles governing application of long-flash tubes whereby ignition of gas at oven and broiler burners could be affected by a single pilot located in the top section.

According to Mr. Teller, a major portion of the research activity of the A.G.A. has been in the field of domestic cooking, most of which has been or will be soon covered in bulletins issued by the A.G.A.

Women's Committee Meets

Addressing the Women's Committee, September 13, Ben L. Wells of the public relations firm of Galbraith & Wells, Los Angeles, discussed women in public relations. He cited three reasons why women make excellent public relations officials for gas utility firms:

"They have," he said, "an advantage over men because they possess a basic desire to please; they tend to be more tactful than men; and the position of women has forced them to be somewhat more indirect in their procedure than men. Women figure out what would cause a person to have a certain attitude toward a certain subject, and then try to use an approach that will lead to that end."

51st Annual Banquet

The 51st annual dinner of the PCGA was held in the Embassy Room of the Hotel Ambassador on Wednesday, September 13. Attendance was 693. President E. L. Payne presided.

The Basford Award, emblematic of the outstanding accomplishment by a section of the association during the past year, was presented to A. H. Sutton in behalf of the Manufacturers' Section.

A committee award was presented to the Committee of Gas Industry Development, headed by H. L. Masser, executive vice-president of the Southern California Gas Co., Los Angeles, and a gold medal to Mr. Masser personally in recognition of his individual efforts in assembling and preparing the data compiled by this committee.

A gold medal was also presented to W. M. Jacobs, Southern California Gas Co., chairman of the Committee for Improving Utility Equipment, and a merit award to the committee as a whole.

In the Women's Contest, first prize for the "Best Year Book" went to Katherine Yoksh of San Joaquin Power Division, Pacific Gas & Electric Co.; and second prize to Virginia Fitzgerald, San Diego Gas & Electric Co.

Second Convention Day

The activities of the second convention day began wtih a "Home Service Breakfast" at 8 a.m. Marguerite Fenner, Director of Home Economics, Pacific Gas & Electric Co., presided. Speakers were Jessie McQueen, Home Service Counsellor, American Gas Association, who talked on the growing importance of home service; and R. E. Fisher, vice-president, Pacific Gas & Electric Co., whose subject was "What We Expect of Home Service—Postwar."

A general business session in the Ambassador Theater at 10 a.m. was attended by approximately 600 men and women.

W. R. Davis, personnel manager, Southern California Gas Co., opened this session with an address on modern methods of teaching "Know How," in which he emphasized that as the postwar era draws near, it is essential for gas companies to get ready to retrain former employees who will soon be returning from military service.

With films and slides, Mr. Davis described the functioning of the J.I.T., J.M.P. and J.R.C. training programs and how they can be used effectively in training executive personnel to teach workers the way jobs should be performed.

1944 Masser Report

H. L. Masser, executive vice-president, Southern California Gas Co., high-lighted this session by a presentation of a transmittal of the

report of the Committee of Gas Industry Development of the PCGA, which had earned him a gold medal award at the annual banquet the previous night.

The Masser Report was in the form of a condensation of more detailed accumulations of data prepared by five primary sub committees, each of which is headed by a sub-chairman. The sub-committee reports, which were incorporated in Mr. Masser's transmittal, were comprised of the following:

Study of Potential Appliance Markets, Ralph J. Phillips, chairman.

Improvements of Gas Utilization Equipment, W. M. Jacobs, chairman.

Sales Promotion Plans, Advertising and Financing, O. R. Doerr, chairman.

Engineering and Technical Studies, Elting Henderson, chairman.

National Economic Factors, W. G. Vincent, chairman.

Institute of Gas Technology

John I. Yellott, director, Institute of Gas Technology, Chicago, outlined the program of gas research being conducted by that establishment. He also presented slides depicting the layout of the Institute.

The post-war disposition of government factories was dealt with at considerable length at this session in a talk by L. M. Klauber, vice-president and general manager, San Diego Gas & Electric Co.

A luncheon meeting at noon was addressed by Leroy M. Edwards, vice-president and general manager, Pacific Lighting Corp., Los Angeles, on the subject "Industrial Southern California In War and Postwar, With Relation to Manpower and its Effect on the Gas Industry."

A joint meeting of the Accounting Section and Personnel Committee was held at 2 p.m. Feature of this session was a symposium on payroll practices, in which the speakers and subjects were as follows:

"Records Used Jointly by Payroll and Personnel Departments," by A. J. Noia, Pacific Gas & Electric Co.

"The Use of Machines in Maintaining These Records," by A. T. Kelly, Pacific Gas & Electric Co.

"Cooperation Between Payroll and Personnel Departments," by R. R. Blackburn, secretary, Southern California Gas Co., who is chairman of the Association's personnel committee.

Meeting concurrently with the other sections was the Technical Section, with Elting Henderson, manager of distribution, Southern California Gas Co., as chairman.

Subjects brought forward for discussion at this meeting included the following:

"Modern Methods of Reconditioning Large Diameter Pipe," by R. W. Todd and A. B. Polley, Pacific Lighting Corp.

A symposium on the character of gas supply, involving the following papers: "Advantages of More Uniformity in Gas Quality by All Gas Companies," by F. C. Packer, Payne Furnace & Supply Co.

"Effect on Appliance Operations of Variation in the Gas Supply," by H. W. Geyer, utilization engineer, Southern Counties Gas Co.; and "Progress in the Mitigation of Impurities in the Gas Supply" by Frank Wills, engineer of production, Pacific Gas & Electric Co.

The Home Service Committee met at 2 p.m. for a round table discussion of activities, methods and results. This discussion was participated in by representatives of gas utility companies, manufacturers and others interested in home economics, nutrition, food preservation and the sales aspects of home service.

All sizes up to 3,400 cu. ft. capacity

Meters
Diaphragms
Repairs
Provers
Pumps
Calorimeters
Wet Meters
Gauges
Apparatus

METER REPAIR PARTS

FOR

ALL MAKES — ALL SIZES OF METERS

LARGEST GAS COMPANIES NOW USING OUR PARTS

SEND FOR OUR CIRCULAR ON METER REPAIR PARTS

SAMPLES AND PRICES GLADLY SENT

— o —

LAMBERT METER CO.

PLAINFIELD, NEW JERSEY

BARBER BURNERS

For All Gas Appliances

S-80

Z-21

Today, the *fuel economy* of Barber Burners is appreciated as never before. Our factory production is now partially devoted to vital parts for combat equipment. Subject to Federal restrictions, Barber Burners and Regulators are still available. Plan NOW for big post-war appliance business. Barber engineers will cooperate on your design problems.

Latest Catalog on request.

THE BARBER GAS BURNER CO.

3704 Superior Ave. Cleveland, O.

COMPLETE GAS PLANTS

●

INDUSTRIAL FURNACES

●

THE GAS MACHINERY CO.

16100 Waterloo Road

Cleveland 10, Ohio

News of the Gas Industry

REGULAR MEETING EXECUTIVE BOARD, AMERICAN GAS ASSOCIATION
NEW YORK CITY — SEPTEMBER 13, 1944

SEATED LEFT TO RIGHT: R. G. Barnett, V.P. & Gen. Mgr., Portland Gas & Coke Co., Portland, Ore.; Marcy L. Sperry, Pres., Washington Gas Light Co., Washington, D. C.; Alexander Forward, Managing Director, American Gas Association; Ernest R. Acker, President, American Gas Association and Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.; J. French Robinson, V.P., American Gas Association, Pres. The East Ohio Gas Co., Cleveland, Ohio; D. A. Hulcy, Pres., Lone Star Gas Co., Dallas, Tex.; Walter C. Beckjord, V.P. & Gen. Mgr., Columbia Gas & Electric Corp., New York, N. Y.; George S. Hawley, Pres., The Bridgeport Gas Light Co., Bridgeport, Conn.

STANDING LEFT TO RIGHT: Kurwin R. Boyes, Sec., American Gas Association; E. P. Noppel, Gen. Consultant, Ebasco Services, Inc., New York, N. Y.; Charles A. Tattersall, V.P. & Sec., Niagara Hudson Power Corp., New York, N. Y.; Harry K. Wrench, Pres. & Gen. Mgr., Minneapolis Gas Light Co., Minneapolis, Minn.; John W. Batten, V.P., Michigan Consolidated Gas Co., Detroit, Mich.; John W. West, Jr., Asst. to Managing Dir., American Gas Association; E. J. Tucker, Dir. & Gen. Mgr., Consumers Gas Co., Toronto, Ont.; F. M. Banks, V.P., Southern California Gas Co., Los Angeles, Calif.; J. H. Warden, Sales Mgr., Oklahoma Natural Gas Co., Tulsa, Okla.; Alexander M. Beebe, Gen. Supt., Gas Dept., Rochester Gas & Electric Corp., Rochester, N. Y.; R. M. Connor, Dir. A.G.A. Laboratories, Cleveland, Ohio; D. W. Harris, V.P.-Gen. Mgr., Arkansas Natural Gas Corp., Shreveport, La.; H. Carl Wolf, Pres., Atlanta Gas Light Co., Atlanta, Ga.; H. Leigh Whitelaw, Managing Dir., American Gas Appliance & Equipment Manufacturers, New York, N. Y.; E. J. Boothby, V.P. and Gen. Mgr., Washington Gas Light Co., Washington, D. C.; H. R. Cook, Jr., V.P. Consolidated Gas Electric Light & Power Co, Baltimore, Md.

Philadelphia Gas Works Co. Wins National Security Award

On August 24th The Philadelphia Gas Works Company was presented with the National Security Award in recognition of achievement through effective joint efforts to safeguard production, employees and property.

The City of Philadelphia, which owns the Gas Works that the Company is operating, and the citizens of Philadelphia who depend on gas for fuel, should obtain considerable satisfaction from the Award, for they thus realize that the plant is under the control of careful management. But it is the industries of Philadelphia who have produced such quantities of war goods and whose processes depend upon the use of gas in their manufacturing programs who are gratified to learn that adequate protective measures have been taken.

A distinguished group of guests, together with employees who performed a wide range of duties in the protection program, were present.

Hudson W. Reed, President of The Philadelphia Gas Works Company, accepted the Award and pledged that the Company would continue with its program of alert plant protection until the national emergency had passed. An address was then made by Ray F. Riegelmeier, Plant Protection Officer, Pennsylvania State Council of Defense, who also presented the National Security Award flag to the Company. The ceremony was closed by singing of America by the entire assembly. Music was furnished by a group from the U.G.I. Music Masters.

A.G.A. Home Service Booklet

In the Home Service Committee Plan of Work, the use of visual aids as a motivator in wartime demonstrations was an assignment given to a sub-committee made up of Mary Belle Burnett of the Cincinnati Gas and Electric Company, Jeannette Campbell of the Minneapolis Gas Light Company, Joie Kammer of the New Orleans Public Service Company, and Florence Windecker of the Tappan Stove Company. The report has been issued in booklet form by American Gas Association.

The booklet presents five types of illustrative material in use in home service departments. The demonstrations are presented in fairly condensed form to illustrate a few of the patterns by which visual material can be used and can be adapted in any form of demonstration work.

New A.G.A.E.M Officials Take Office

The officers of the Association of Gas Appliance and Equipment Manufacturers, elected at its meeting in Chicago, May 8-9, for 1944-1945, took office October 1st. They are:

President—Lyle C. Harvey, President, The Bryant Heater Company, Cleveland, Ohio; *1st Vice Pres.*—D. P. O'Keefe, President, O'Keefe & Merritt Company, Los Angeles, California; *2nd Vice Pres.*—John A. Robertshaw, President, Robertshaw Thermostat Co., Youngwood, Pennsylvania; *Treasurer*—John Van Norden, Secy. & Mgr. Sales Promotion, American Meter Company, New York, N. Y.

The divisional chairmen are as follows: *CP Sales Management Committee,* L. C. Ginn, American Stove Company, Cleveland, Ohio; *Direct Heating Equipment Division,* H. E. Thompson, Chief Engineer, Peerless Manufacturing Corp., Louisville, Ky.; *Domestic Gas Range Division,* F. J. Hoenigmann, Cribben & Sexton Co., Chicago, Ill.; *Gas Refrigerator Division,* Louis Ruthenburg, President, Servel Inc., Evansville, Ind.; *Gas Valve Division,* R. L. O'Brien, Detroit Brass & Malleable Works, Detroit, Mich.; *Gas Water Heater Division,* J. R. Lavelle, John Wood Mfg. Co., Conshohocken, Pa.; *Hotel, Restaurant and Commercial Gas Equipment Division,* Stanley E. Little, Vice President, American Stove Company, Cleveland, Ohio; *House Heating and Air Conditioning Equipment Division,* A. A. Marks, Richmond Radiator Co., Uniontown, Pa.; *Industrial Gas Equipment Division,* E. W. Mears, Mears-Kane-Ofeldt, Philadelphia, Pa.; *Meter & Regulator Division,* Norton McKean, President, American Meter Company, Albany, N. Y.; *Thermostatic Control & Accessories Division,* W. T. Bentley, President, Titan Valve and Mfg. Co., Cleveland, Ohio; *Advisory Council,* F. H. Adams, Surface Combustion Division, Toledo, Ohio; *Policy Committee,* W. T. Rasch, Security Manufacturing Company Kansas City, Mo.; *P.C.G.A. Manufacturers Section,* A. H. Sutton, President, Mission Water Heater Co., Los Angeles, Calif.; *Vice Chairman—P.C.G.A. Manufacturers Section,* E. T. Howard, Gen. Sales Mgr., General Controls Co., Glendale, Calif.; *Secretary and Managing Director,* H. Leigh Whitelaw; *Counsel,* George H. Richards.

Lyle C. Harvey

D. P. O'Keefe

John A. Robertshaw

J. Van Norden

Roper Issues Colorful Booklet on Gas Kitchens

A colorful new booklet "A Peek Into The Amazing New World of Tomorrow" has been mailed by the Geo. D. Roper Corporation, Rockford, Illinois, to thousands of gas companies and dealers, as well as to many firms in the architectural, building, appliance and associated industries.

The new booklet is a story book in appearance. An animated princess character scampers gayly through the pages looking at the amazing new airplanes, automobiles, furniture, homes and other miracles of tomorrow.

In her journey she suddenly arrives at the location of six new Roper Gas Kitchens which will come into being soon after the end of the war.

Although some of the general illustrations may seem somewhat fanciful, the colored renditions of post-war gas kitchens are quite practical. Each kitchen shown is a kitchen that can actually be built soon after the close of hostilities when once again appliance and kitchen cabinet manufacturers go into action on an intensive scale.

In the first place, the book is designed to stimulate the thinking of the gas industry and dealers. It calls attention to the unlimited possibilities of gas, the fuel, for use in the kitchen and in all parts of the home—gas for cooking, refrigeration, water heating, home heating—gas for air conditioning and many other jobs which it performs with enviable dexterity.

A further objective is to point out to the public at large these same outstanding contributions which gas will make to postwar living in homes throughout America.

The Roper Gas Kitchens shown are "co-ordinated" kitchens. Units are designed to fit one with the other so that an extremely pleasing and workable assembly is the result.

A wave of enthusiasm has quickly greeted the original mailing of this booklet. It is anticipated by the Geo. D. Roper Corporation that many gas companies and dealers will want to use the book right away for direct distribution to prospective post-war customers as well as builders, contractors, architects, pre-fabricated home manufacturers, apartment house owners, public schools, libraries, building and loan associations, company employees and others throughout each community.

Martin with Servel Inc.

The appointment of Edward R. Martin as chief marketing statistician for Servel Inc., Evansville, Ind., was announced recently by Lyman Hill, sales research director.

Before coming to Servel Mr. Martin was associated with the American Gas Association in New York for nine years as superintendent of statistical activities.

Elizabeth Lynahan Home Service Director

Miss Elizabeth J. Lynahan, since 1935 a member of the home service department of the Peoples Gas Light and Coke Company, Chicago, and since 1939 a supervisor, has been named home service director of the company.

Elizabeth Lynahan

Miss Lynahan replaces Miss Karen Fladoes, who resigned recently to take the position of director of home economics of the Nash Kelvinator Corporation, Detroit, Michigan.

R. B. Harper Receives Honor Scroll Award

Robert Brinton Harper, vice president of the Peoples Gas Light and Coke Company of Chicago, and one of the leading gas chemists and engineers of the country, is the 1944 recipient of the Honor Scroll award which is presented each year by the American Institute of Chemists to an outstanding member of the chemical profession.

The award is made to Mr. Harper in recognition of his distinguished service to the gas and allied industries as an organizer, executive and scientist. The Scroll was presented by Dr. H. I. Jones, chairman of the Chicago chapter of the American Institute of Chemists, at a testimonial dinner in the Morrison Hotel on October 6.

Robert B. Harper

Mr. Harper was graduated from Armour Institute of Technology in 1905, with a Bachelor of Science degree in chemical engineering, and joined the Peoples Gas organization in June of the same year. He received the advanced degree of Chemical Engineer in 1909.

Beginning as an assistant chemist in a five-man laboratory, of which he became the head within a year, he has steadily increased the scope and value of research and testing within his company. He became a leader in the modernization of the gas industry. Today, he directs the operation of eight research and testing departments which are outstanding in their field. He has pioneered in the development and standardization of methods for physical, chemical, utilization and plant testing. He has personally carried out a series of productive researches. In the course of his work, he has conducted gas plant investigations in various parts of the United States, Canada, England, Scotland, France, Italy, Switzerland, Belgium, Holland and Germany.

He holds the Beal Medal Award, for the most outstanding technical paper presented to the American Gas Association during 1931. In 1933 he was elected a Fellow of the American Association for the Advancement of Science, and in 1936 became a Fellow of the American Institute of Chemists.

In 1938, he received the Walton Clark Gold Medal of The Franklin Institute of Philadelphia, as an award in recognition of "his leading part in the development, supervision and direction of a research and testing laboratory of outstanding excellence in the gas industry; his cooperation personally, and through members of his staff, with the gas industry generally; and his own distinguished work in the chemistry and physics of the gas industry."

Company Lights Pilots In Advance of Cold Weather

Many of The Gas Service Company properties, The Kansas City Gas Company and The Wyandotte County Gas Company, have mailed to house heating customers again this year, a letter asking permission of the customers to light their furnaces in advance of cold weather and before the beginning of the heating season.

The letter explained that it is necessary for the company to conserve tires and equipment and because of the shortage of manpower due to the loss of many trained employees to the service, it was an impossible task to give normal service without the cooperation of those who requested this service. The customers were asked in the letter to return the enclosed self-addressed postal card permitting the company to light the pilot light the first time company men were in the neighborhood after September 1.

Hazard Becomes Manager At Bloomington, Ill.

H. J. Hazard, since July 1, 1942, secretary and treasurer of the Union Gas and Electric Company, Bloomington, Illinois, has been named manager of the utility, according to an announcement issued by president William E. Vogelback.

Hazard has held various accounting and management positions in the gas industry for the past 18 years.

He was formerly assistant manager of the Van Wert Gas Light Company, Van Wert, Ohio; assistant superintendent of the Kentucky-Tennessee Light and Power Company, Bowling Green, Kentucky; treasurer of the Owensboro Gas Company, Owensboro, Kentucky; and secretary and treasurer of the Indiana Gas Utilities Company, Terre Haute, Indiana.

Expanded Research Plans of American Gas Assn.

Plans for an expanded program of gas utility industry research, national advertising and general promotion calling for an expenditure of $1,400,000 a year for three years have been approved by the Executive Board of the American Gas Association. The new funds will be raised by subscriptions from local gas companies.

"Post-war opportunities for the increased use of gas fuel in both homes and industrial plants appear to be unlimited," Ernest R. Acker, president of the Association declared. He stated further that the gas industry intends to take advantage of these opportunities by promoting the greater utilization of its service so that customers may enjoy its benefits to the fullest extent possible.

"In the field of research," he said, "there appear to lie immediately ahead great advances in the art of production, distribution and utilization of gas fuel. For example, our research laboratories have already demonstrated the fact that the gas flame can be made to travel instantaneously downward, in circles, around corners and in virtually any direction. The possibilities of this development alone are almost limitless.

"There will also be produced a greater variety of household equipment with new automatic features to the end that the all-gas kitchen of tomorrow which will be free of cooking odors, clean and cool, will fulfill the fondest dreams of Mrs. Homemaker."

Southern Research Institute Appoints Director

Wilbur A. Lazier has resigned as research group leader in the Chemical Department, E. I. du Pont de Nemours and Company, to become Director of Southern Research Institute, which will establish laboratories at Birmingham, Alabama. Dr. Lazier's work in the du Pont Company has been concerned especially with investigations in contact catalysis and the development of intermediates for sulfated alcohols and nylon. In his new position he will be responsible for the development of a comprehensive research program for advancing technology in the southern states. Southern Research Institute will operate on an industrial fellowship plan.

The Reliable Shut-Off for Street Mains

THE GOODMAN STOPPER

Now has the "Z" handle for easy manipulation. When locked in place it holds. Stopper cannot slip. Gas cannot pass. Adjusted in 30 seconds.

Ask for circulars on this and other distribution equipment.

Nearly a half century of service to the Gas Industry.

Safety Gas Main Stopper Co.
523 Atlantic Avenue, Brooklyn, New York

Group Attending Friday Afternoon Session of the Appalachian Gas Measurement Short Course General Committee Meeting.

Appalachian Gas Measurement Short Course Plans Made for 1945

The General Committee of the Appalachian Gas Measurement Short Course held a two-day meeting on August 25 and 26 at the School of Mines, West Virginia University, Morgantown, West Virginia. One of the important events on the agenda of the committee was planning for the resumption of the Appalachian Gas Measurement Short Course which is normally conducted annually by the School of Mines, West Virginia University, in cooperation with the Public Service Commission of West Virginia, the West Virginia Oil and Natural Gas Association, the American Gas Association and the industries concerned in producing and marketing oil and natural gas and manufacturing metering and regulating apparatus in West Virginia and surrounding states. Due to the effects of the war effort it became necessary to suspend the annual Gas Measurement Short Course during 1942, 1943 and 1944. At this meeting the general committee, after considering the satisfactory progress of the war, proceeded to lay tentative plans for the resumption of the Gas Measurement Short Course in 1945.

In addition to considering plans for the 1945 short course, technical sessions were held. At these sessions the following papers and reports were presented:

Designing and Installing Measuring and Regulating Stations. Report No. 3 of the Practical Methods Committee, C. B. Heist, Chairman.

New Developments in Measurement of Pulsating Flow, S. R. Beitler.

Extension Program of the School of Mines, West Virginia University, for Employees of the Natural Gas Industry, George McKinley.

Gas Supply in West Virginia, H. J. Wagner.

The Operation and Testing of Large Capacity Displacement Meters in the Field, John L. Galpin and Walter L. Smith.

The General Committee authorized the publication of Report No. 3, entitled "Designing and Installing Measuring and Regulating Stations," after minor changes are made. A special committee was named to investigate the subject of regulator freezing with S. R. Beitler serving as chairman. Practical Methods Committee No. 4 was established to prepare a set of convenient tables and graphs for gas men. C. A. Smith was appointed chairman of this committee.

The following members and guests of the General Committee attended the meeting:

C. C. Abbott, J. W. Allison, Howard E. Barr, W. J. Bath, H. V. Beck, S. R. Beitler, R. W. Chichester, A. C. Daugherty, Robert J. Dunbar, James M. Durant, C. H. Eakin, Howard J. Evans, Wilber G. Ganoe, John M. Gibson, G. W. Harr, Clark B. Heist, Charles T. Holland , Lawrence Hunter, A. H. Isaac, R. H. Jenney, Stacy Jones, R. H. Kaufman, E. B. Kiser, A. F. Kraus, Charles E. Lawall, John Lemley, E. M. Lockwood, Joe M. Low, Arthur R. McDowell, George W. McKinley, J. R. Mercer, C. G. Moorehead, H. J. Neilson, J. E. Overbeck, Stanley J. Rawson, Edwin Robinson, Edward Sackett, Paul G. Schwender, A. H. Shafer, Blanchard Smith, C. A. Smith, Walter L. Smith, W. B. Smith, W. P. Smith, T. K. Spalding, Jr., L. K. Spink, W. A. Staab, W. A. Stoeltzing, Clarence Stiles, Roscoe White, Clyde H. Whitwell, F. Whitworth, F. M. Williams, Cecil Wines, F. N. Wolf, Howard B. Yost, R. H. Lussky, H. J. Wagner, Paul S. Pfeifer, J. R. Sproat.

Industrial Gas at the National Metal Congress

The Annual Industrial Gas Breakfast and Meeting at the National Metal Congress will be held by the Industrial and Commercial Gas Section of the American Gas Association at Hollenden Hotel, Cleveland, Ohio, on Wednesday, October 18, at 8:30 A.M. All gas men and equipment manufacturers who will be at the National Metal Congress are invited to attend.

A valuable program that will extend through the morning has been arranged. Outstanding heat treaters and others will take part in this program. The meeting will adjourn in time to allow for attendance that day at the National Metal Exposition where leading industrial gas equipment manufacturers will have displays.

Charles G. Young is Chairman of the Industrial and Commercial Gas Section of the Association.

H. V. Lindeman Joins Jacksonville Gas Corp.

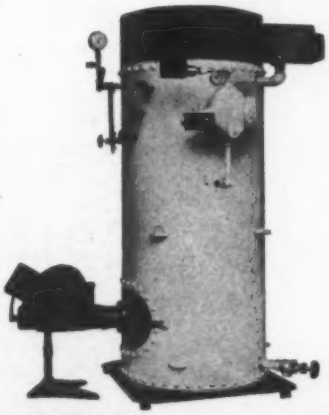
Henry V. Lindeman who has been employed as Principal Engineer in the Manufactured Gas Division of the Office of War Utilities since 1942 has resigned to join the Jacksonville Gas Corporation at Jacksonville, Fla., as Engineer.

Application Filed to Make Natural Gas Available to Nashville, Tenn.

The Federal Power Commission announced Sept. 5th its receipt of an application filed under Section 7 of the Natural Gas Act, as amended, by the Tennessee Natural Gas Lines, Inc., Chattanooga, Tenn., for a certificate of public convenience and necessity to construct and operate facilities to make natural gas available to the City of Nashville, Tenn.

The proposed pipeline system will consist of a 10¾-inch line originating at a point of connection with the Tennessee Gas and Transmission Company's facilities near Ashland City, Tenn., and extending a distance of about 17 miles to Nashville. The Tennessee Gas and Transmission Company has agreed to supply natural gas at reasonable prices and in sufficient quantity to enable applicant to serve its proposed initial market.

LATTNER
GAS — OIL BOILER
3 HP to 35 HP.



Burns natural gas or regular furnace oils with equal efficiency using same burner.

P. M. Lattner Mfg. Company
Cedar Rapids, Iowa

Colonel McClenahan Receives Order of British Empire

Word has recently been received that Colonel R. W. McClenahan of Philadelphia, now attached to the staff of Major General Elwood R. Quesada of the Ninth Air Force Fighter Command, has been awarded by King George of England the Order of the British Empire for distinguished service in cementing relations between the Allied Nations.

Col. R. W. McClenahan

Colonel McClenahan was given leave of absence from American Meter Company in March, 1942, and was shortly thereafter sent to the middle east for special service. He was present at the Cairo and Teheran conferences. While there serving as an Intelligence Officer, he was awarded the Legion of Merit last September.

He was born in Cairo, Egypt, where his father, Dr. Robert Stewart McClenahan, was dean of the American University. His knowledge of the Arabic and other languages rendered his service of particular value.

At the conclusion of active war in that area, he was transferred to the European area with the Ninth Air Force which has played so large a part in the Normandy invasion and in the subsequent offensive battles of the Allied Armies.

From advanced headquarters, with the tactical command, he was recently quoted by the Associated Press as stating that the Cherbourg Peninsula region was paralyzed by what probably was the greatest tactical air attack in the history of warfare.

Fire-Fighting Film is Available to Gas Industry

Because of the unprecedented demand for its motion picture "Flame Facts," Walter Kidde & Company have retained Princeton Film Center as distributing agents. This 20-minute, 16 mm. Kodachrome sound film shows how and why fire burns, the appropriate extinguisher for each type of blaze, and its correct use. It illustrates some of the common errors in industrial first-aid fire-fighting which can be responsible for failure, and gives valuable tips on fire prevention.

The number of requests for this film, together with wartime limitations on prints, have necessitated restricting bookings to those arranged by industrial plants, public utilities and other groups directly concerned with first-aid fire-fighting.

Eligible groups who wish to obtain the film may apply to Princeton Film Center, Princeton, New Jersey, for bookings at a charge of 50c each to cover handling costs.

Iroquois Gas Co. Extends Pipe Line

A Federal Power Commission order authorizing the delivery of 15,000,000 additional cu. ft. of natural gas by pipe line daily to western New York and Pennsylvania from Texas and West Virginia means that this area "after next winter will have no shortages on the basis of conceivable consumer demands," President Olin F. Flumerfelt of the Iroquois Gas Corp., Buffalo, declared.

"It is not expected that the new pipe line connections in Pennsylvania will be completed in time for Iroquois to accumulate any more than just sufficient reserves of gas this summer to meet wartime winter demands which may be still further increased by the shortage of other fuels," Mr. Flumerfelt said. "This will mean that existing restrictions and the urgent need for conservation probably will continue through the coming winter. Following that, Iroquois should have ample supplies of natural gas for years."

FPC Authorizes Southern Natural Gas Co. to Construct New Lines

The Federal Power Commission announced Sept. 22 its order authorizing the Southern Natural Gas Company, a Delaware corporation with its principal offices in Birmingham, Alabama, to construct and operate additional facilities in Alabama, Georgia, Louisiana and Mississippi and to abandon about 2 miles of pipeline near Bessemer, Alabama.

The company is authorized to construct and operate loop lines varying in diameter from 10 to 22 inches and in length from 697 feet to about 27 miles, in Perry, Dallas and Jefferson Counties, Alabama, Issaquena County, Mississippi, and Fulton, Bibb and Coweta Counties, Georgia, and other miscellaneous equipment; about 5 miles of 4-inch pipeline in Jefferson County, Alabama, with appropriate metering and pressure regulating equipment for the direct sale of natural gas to Republic Steel Corporation, near Spaulding, Alabama, seven air-cooled mufflers on seven 1300-horsepower gas compressors at the Perryville compressor station, and two gas scrubbers at the company's dehydration plant at Logansport, Louisiana.

Bur Named Sales Mgr. Wisconsin Public Service Corp.

Arnold G. Bur, since 1930 assistant treasurer and Public Service division auditor at Green Bay, Wisconsin, has been named sales manager of the Wisconsin Public Service Corporation to succeed Allan C. Davey, who resigned recently to accept another position. The sales manager's office will be moved to Green Bay.

Simultaneous with this announcement was another designating Company advertising manager Dale Remington as assistant sales manager, a newly created post. Remington will continue to handle advertising matters of the Company.

Central Illinois Electric & Gas Extension

Extension of a natural gas pipe line to the main Rockford gas plant is planned by the Central Illinois Electric and Gas Co. if the materials can be obtained.

Utility officials said the War Production Board had approved construction of a 10-in. line, 3½ miles long.

GPM
IRON HYDROXIDE
The mark of
unerring dependability
in purification
GAS PURIFYING MATERIALS CO., INC.
3-15 26th Ave.
Long Island City 2, New York

FOR SALE
1—200,000 Cu. Ft.
Gas-Relief Holder
We have various capacity storage tanks and invite any inquiries.
EMPIRE TANK & SALVAGE CO.
1451 Broadway, New York, N. Y. LAckawanna 4-5760

INDEX TO ADVERTISERS

American Meter Co. 18
American Radiator & Standard Sanitary Corp. —
American Stove Co. 15
Assn. of Gas Appliance and Equipt. Mfrs. .. 30

Barber Gas Burner Co., The 59
Besse, Osborn & Odell ..... —
Blaw-Knox Company 12

Cast Iron Pipe Research Assn., The ..... —
Chaplin-Fulton Mfg. Co., The ..... —
Clark Bros. Co. ..... —
Cleveland Gas Meter Co. 67
Cleveland Heater Co. ..... —
Cleveland Trencher Co. 43
Coal Carbonizing Co. ..... —
Columbia Burner Co. 67
Columbia Gas & Electric Co. 14
Connolly Iron Sponge & Governor Co. 66
Cooper-Bessemer Corporation ..... —
Cribben & Sexton Co. ..... —
Cruse-Kemper Co. 53

Detroit-Michigan Stove Co. ..... —
Dresser Mfg. Co. 16

Empire Tank & Salvage Co. 64
Estate Stove Co. 41

Gas Machinery Co. 59
Gas Purifying Materials Co. 64
General Coal Co. 36

Harper-Wyman Co. 34-35

Lambert Meter Co., Inc. 59
Lattner Mfg. Co., P. M. 63
Lavino & Co., E. J. 29
Lincoln Electric Co. ..... —

Merco-Nordstrom Valve Co. 2
Metric Metal Works 18

Norton Company 10-11
Norwalk Valve Co. 44

Payne Furnace & Supply Co. 33
Pittsburgh Coal Co. 13
Pittsburgh Equitable Meter Co. 2

Reynolds Gas Regulator Co. ..... Front Cover
Robertshaw Thermostat Co. ..... —
Roberts-Gordon-Appl. Corp. ..... —
Roper Corp., Geo. D. ..... —

Safety Gas Main Stopper Co. 62
Semet-Solvay Engineering Corp. 3
Servel Electrolux Division 4-5-6-7
Smith Corporation, A. O. 67
Sprague Meter Co., The ..... Back Cover
Stacey Manufacturing Co. 39
Superior Meter Co. 39
Syntron Co. ..... —

United Engineers & Constructors, Inc. 8-9

West Gas Improvement Co. 67
Worthington Pump and Machinery Corp. .... —

L. J. Eck Appointed Asst. Gen. Mgr at Minneapolis

Harry K. Wrench, president and general manager of the Minneapolis Gas Light Company, recently announced the appointment of Lester J. Eck to the position of assistant general manager. This announcement was made as a result of action taken in a recent meeting of the Board of Directors of the Minneapolis Gas Light Company.

Mr. Eck, on August 18th, became a member of the Veterans' Club of the Minneapolis Gas Light Company. This is an organization of employees who have been with the company at least twenty years. Mr. Eck is a vice-president and has been in charge of operations for some time. He will, of course, continue in this capacity, but will assume new responsibilities as assistant to Mr. Wrench.

Lincoln Electric Announces New Appointments

W. R. Persons, Pittsburgh District Manager of The Lincoln Electric Company, Cleveland, Ohio, has been transferred to the factory and main office at Cleveland to carry out a special post war planning assignment.

He joined the Pittsburgh office of Lincoln Electric in 1934, and became branch manager there in 1937, continuing in that position until moving to Cleveland.

At the same time, Mr. J. S. Roscoe, former Syracuse District Manager, has been appointed Manager of the Pittsburgh office.

CHARLES C. REED

Charles Cornwall Reed, 59, of Clarksburg, W. Va., for six years general superintendent of the Hope Natural Gas Co., died August 20, a half hour after he was seized by a heart attack. He was 59 years old.

Mr. Reed had been in the employ of the Hope company since September 27, 1910, the year he came to Clarksburg, as assistant superintendent of the meter and gasoline department. In 1920, he was appointed superintendent of the gasoline department for the Hope Construction and Refining Co. and served in that position until he was made assistant general superintendent of the entire Hope company.

While serving with the Hope Construction and Refining, he directed much of the pioneer work in the development and perfection of the absorption method of gasoline extraction from natural gas.

In October of 1938, Mr. Reed became general superintendent of the Hope and a director of the company and its affiliates.

SALES ENGINEERS WANTED

Established manufacturer has opening for two or three young men with Sales experience in Gas Industry. Knowledge gas meters and regulators essential; engineering background desirable. Excellent Post-War opportunity. Full details first letter necessary to arrange interview. Address Box 137, c/o American Gas Journal, 53 Park Place, New York 7, N. Y.

BACK ISSUES—BUREAU OF MINES AND GEOLOGICAL SURVEY REPORTS AVAILABLE

Out of print Geological Survey and Bureau of Mines publications supplied. Send for lists indicating States in which you are interested. James C. Howgate Bookseller, 120 So. Church St., Schenectady 5, N. Y.

WANTED
Product Development Engineer

Jas. Graham Mfg. Co., one of the major Pacific Coast gas range manufacturers, desires to obtain for a permanent position, a graduate engineer having the following capabilities:

*Experience in gas range design and combustion practices
*Familiarity with AGA testing procedures
*Knowledge of production operation and development

Give complete details as to personal qualifications, age, experience, education, etc.

Apply Personnel Department, Jas. Graham Mfg. Co., Newark, California.

N. T. Sellman Elected V.P. Westchester Lighting Co.

Nils T. Sellman was elected a vice president of the Westchester Lighting Company and of The Yonkers Electric Light and Power Company on Sept. 26th. He was also elected to the executive committee of the Westchester Lighting Company and to the Board of Directors of the Yonkers Company. Mr. Sellman, as assistant vice president of Consolidated Edison Company of New York, Inc., has been in charge of electric and gas sales in New York City since 1942.

He has been a director of the Westchester Lighting Company since 1942.

Mr. Sellman has been connected with Consolidated Edison System Companies for thirty-one years. He was born in Sweden in 1890. Immediately after graduating from Stevens Institute of Technology with the degree of mechanical engineer in 1913 he became a test engineer for the Consolidated Gas Company. He entered the Army in 1916, serving on the Mexican border. In World War I he was commissioned a Lieutenant in the 30th Engineers and served in France until 1919. He then returned to the Consolidated Gas Company and in 1921 joined the American Gas Association, later becoming assistant secretary manager of the Association. In 1925 he returned to Consolidated Gas Company as engineer of utilization. He was appointed assistant secretary of the company in 1928 and director of sales and utilization in 1929. Since the mergers of the gas and electric companies into the Consolidated Edison Company in 1936, he has been assistant vice president in charge of sales. Prior to the mergers he was a director of several of the gas companies in the System.

Schoelkopf, Chairman, Niagara Hudson Power Co., Resigns

Three members of the board of directors of Niagara Hudson Power Corp., including Paul A. Schoelkopf, chairman, resigned Sept. 21st, declaring in a letter to the directors that they wished to devote their time to reorganization of the company's western New York affiliate, Buffalo, Niagara & Eastern Power Corp.

Mr. Schoelkopf will continue as chairman of the board of Buffalo, Niagara & Eastern and as president of Niagara Falls Power Co. Resignations of Colonel William Kelly, president of Buffalo, Niagara & Eastern, and Dr. Norman R. Gibson, vice-president of Buffalo, Niagara & Eastern, were also submitted at a meeting of Niagara Hudson board.

Earle J. Machold, president of Niagara Hudson, said that the resignations would not affect the relations existing between Niagara Hudson and Buffalo, Niagara & Eastern Power Corp., and added that the board of Niagara Hudson had accepted the resignations "with deepest regret."

Miss Moomaw Resigns From A.G.A.

Honoria B. Moomaw has resigned as secretary of the Natural Gas Department of the American Gas Association effective October 1. She has accepted a position in the natural gas consulting organization of E. Holley Poe in New York.

Miss Moomaw has been secretary of the Natural Gas Department since June 15, 1942. Prior to that time for a number of years she was secretary to Mr. Poe when he was associated with the American Gas Association as executive secretary of its natural gas activities.

Saskatoon, B. C. To Be Served With Natural Gas

Sufficient supply of natural gas is already in sight in the Lloydminster, Lone Rock and Muddy Lake fields in Saskatchewan, and his company only awaits release of the required steel piping before beginning the construction of a pipe line to Saskatoon, C. O. Brown, managing director of the Northern Natural Gas Company, told members of the City Council at Saskatoon recently. "It looks as if we should be able to start next spring, and if so, the project will be completed for operation at the beginning of the heating season next year.

"We are prepared to go ahead, and we have sufficient gas to warrant going ahead," said Mr. Brown. His company was putting forth every effort and keeping in close touch with the situation with regard to supplies and materials.

Smaller pipe, of the eight-inch type, would be purchased in Canada if it was found that the Canadian pipe could compete in quality. At present, steel was tight, and it was all going into shipyards and shell manufacture. However, he expressed the opinion that the time would come before the cessation of hostilities when it would become available.

It was true there had been some pipe available in the United States, but he said it all had gone to essential war industry projects. It should be possible to get the best rating for the natural gas line as a reconversion project, Mr. Fisher declared. He considered it was an ideal project for taking up the slack in the postwar period, and it would serve a useful public purpose in taking up possible unemployment following the closing down of war industries. It would supply a market for 20,000 tons of fabricated steel, he said.

Lincoln Foundation Papers Placed in A. F. Davis Welding Library

All papers submitted in the James F. Lincoln Arc Welding Foundation's $200,000 Award Program of 1937-38, and the Engineering Undergraduates Award and Scholarship Program of 1942-43, have been placed with Ohio State University's A. F. Davis Welding Library, Columbus, Ohio.

The papers add substantially to the wealth of welding information in this collection, one of the largest of its kind in the world, according to Professor Stitt, who said it contains approximately 1,000 books on designing for welded construction, welding techniques and procedures, properties of weld metals, standard welding handbooks, metallurgy, also magazine articles, technical papers, patents and other literature contributing knowledge on the subject of welding.

Copies of some seven thousand patents concerning welding equipment and the patented applications of welding to products or structures are now on file. This library is rapidly becoming one of the most extensive reference collections available in the Middle West from which patent researchers in the field of welding can obtain important information.

The library was presented to the university in 1942 by an alumnus, A. E. Davis, vice president of The Lincoln Electric Company, Cleveland, who was graduated in the class of 1914 with the degree of M.E. in electrical engineering. He selected Ohio State University for the gift, it was said, because it is the only university in the country that offers a four-year course in welding engineering.

FOR ECONOMICAL GAS PURIFICATION

Today's increased demands on the Gas Industry from both the production and home fronts has created many new problems in Gas Purification and sulphur corrosion.

In hundreds of plants throughout the country, Connelly Iron Sponge has not only helped decrease costly sulphur corrosion, but has also materially improved gas purification and lowered the operating and maintenance costs.

If you have a problem in gas purification, it will pay you to consult Connelly. A thorough analysis of your problem and unbiased recommendations will be made without obligation.

CONNELLY IRON SPONGE & GOVERNOR CO.
CHICAGO ILL - ELIZABETH N J

CHEMICAL TABLES

A Handbook of selected subjects from the Handbook of Chemistry & Physics 1938 Edition.

Subjects covered include Mathematical Tables; Properties and Physical Constants of Organic and Inorganic Compounds; General Chemical Tables; Specific Gravity and Properties of Matter; Heat and Hygrometry; Electricity; Light; Quantities and Units. Also other miscellaneous subjects.

Sectionally arranged with a complete index. Size 5" x 7¼", 1390 pages, flexible leatherette cover.

$1.00 a copy postpaid — American Gas Journal 53 Park Place, New York

GLOVER-WEST

CARBONIZING SYSTEMS

• *boost* production

• *cut* fuel costs

440 CARBONIZING PLANTS, in 20 countries, testify to the outstanding advantages of GLOVER-WEST Systems.

Today, with the fate of civilization depending on the speed and efficiency of our war-output, these advantages cannot be overstressed:

GLOVER-WEST CARBONIZING SYSTEMS

- ***LOWER*** Fuel Consumption and Maintenance
- ***FACILITATE*** Operation
- ***PRODUCE*** dryer, cooler Coke
- ***REQUIRE*** less Ground Area
- ***INSURE*** greater Flexibility

WEST GAS IMPROVEMENT CO.
424 Madison Ave., New York, N. Y.

CLEVELAND

"A" TYPE METERS
"B" TYPE METERS
DIAPHRAGMS

Cleveland Gas Meter Co.

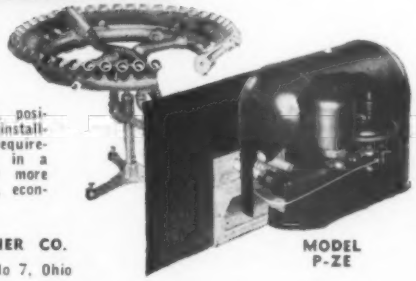
ESTABLISHED 1895
2009 Rockwell Ave., Cleveland 14, O. Phone CHerry 2351

COLUMBIA CONVERSION GAS BURNERS

FOR WARM AIR FURNACES AND HOT WATER, STEAM AND VAPOR BOILERS

NU-TYPE ductless burner that performs perfectly with natural, manufactured or mixed gas.

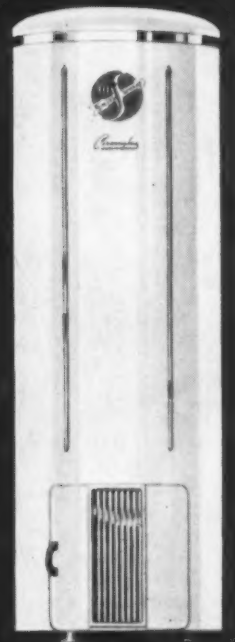
Popular with scores of utilities and thousands of home owners. Simplifies problem of converting to gas. Tamperproof controls, quiet operation, high efficiency, positive performance. Easily installed. Negligible service requirements. Each installation in a neighborhood sells many more because of its simplicity, economy and ease of control.



MODEL P-ZE

COLUMBIA BURNER CO.
729 Ewing St., Toledo 7, Ohio

PERMAGLAS



...A Feature that Challenges Comparison

Glass is clean. It's sanitary. It's the answer to your postwar market that will demand newer and higher standards of perfection in hot water convenience, sanitation, and cleanliness.

That's why SMITHway Automatic Gas Water Heaters are lined with glass . . . *Permaglas* . . . a smooth, lustrous, sanitary, blue glass lining permanently fused to the inside of SMITHway Tanks.

Permaglas is the modern and healthful way of heating and storing *clean* hot water—just as clean as the water you drink from the tap.

MONOQUAD CONSTRUCTION ASSURES FLAWLESS GLASS LINING

The tank cylinder, the two heads, and the flue are individually glass lined before assembly. This permits minute inspection of every square inch of the glass-lined surfaces. When finally assembled by Smithwelding, the result is a strong, flawless tank that will give years of carefree service.

Write for further information and get the inside story on SMITHway Automatic Gas Water Heaters lined with *Permaglas*.

Have You Bought an Extra War Bond This Month?

A. O. SMITH Corporation

Milwaukee 1, Wisconsin

Offices at: New York, Pittsburgh, Chicago, Tulsa, Houston, Los Angeles and Seattle
In Canada: JOHN INGLIS CO., LIMITED

Permaglas Victory Model Heaters are available in all sizes in accordance with W.P.B. limitation order L-185.

SMITHway Permaglas GLASS LINED

GAS WATER HEATERS

meters and regulators

INDIVIDUAL OR COMBINATION UNITS

Not a P... wa... dream ... but an act... lity

WRITE FOR YOUR COPY NOW

THE NEW SPRAGUE SHOP MANUAL NO. 17

THE SPRAGUE METER CO. BRIDGEPORT, CONN

DAVENPORT, IOWA • LOS ANGELES, CALIF. • HOUSTON, TEXAS • SAN FRANCISCO, CAL